COMMERCIAL FERTILIZER

CONSOLIDATED WITH THE FERTILIZER GREEN BOOK

Arcadian

AMERICAN NITRATE OF SODA®

New, big, square, triple-screened crystals of new-process ARCADIAN Nitrate of Soda provide all the advantages of quick-acting nitrate nitrogen and are easier to spread than ever before. This freer-flowing, greatly improved physical condition makes new ARCADIAN Nitrate the best nitrate of soda ever produced. Your customers will want it for top-dressing and side-dressing early this spring. Production is now under way, so ask us now about supplies of *improved* ARCADIAN Nitrate of Soda.

A-N-L® Nitrogen Fertilizer is another dependable nitrogen for side-dressing and top-dressing. This pelleted product provides 20.5% nitrogen—10.2% as nitrate and 10.3% as ammonia.

NITROGEN DIVISION Allied Chemical & Dye Corporation

New York 6, N. Y. • Richmond 19, Va. • Hopewell, Va. • South Point, Ohio • Atlanta 3, Ga. • Columbia 1, S. C. • San Francisco, Calif. • Omaha, Neb.

NITROGEN DIVISION ALLIED CHEMICAL

Air view showing dryers and rock storage at Pierce, Florida, headquarters of A.A.C. phosphate mining operations. (Top) Sample of Florida Pebble Phosphate Rock, source of phosphorus widely used in the chemical industries, in its elemental form as well as in phosphoric acid, phosphates and phosphorus compounds. Q. This pebble rock is also the principal source of the most important—and most generally deficient—plant food element. Often called the Key to Life, phosphorus is essential in maintaining and improving crop yields. Health, growth, life itself, would be impossible without phosphorus . . . so in a way these phosphate pebbles are more precious than gold.

AA Quality...

for over 85 years a symbol of quality and reliability

principal AA QUALITY products

All grades of Florida Pebble Phosphate Rock **AA QUALITY Ground Phosphate Rock**
All grades of Complete Fertilizers **Superphosphate**
Gelatin **Bone Products** **Salt Cake** **Ammonium Carbonate**
Sulphuric Acid **Fluosilicates** **Insecticides and Fungicides**
Phosphoric Acid and Phosphates **Phosphorus and Compounds of Phosphorus**

THE AMERICAN AGRICULTURAL CHEMICAL COMPANY
GENERAL OFFICE: 50 CHURCH STREET, NEW YORK 7, N. Y.
31 FACTORIES AND SALES OFFICES, SERVING U. S., CANADA AND CUBA—ASSURE DEPENDABLE SERVICE

One-Stop NITROGEN Service For Fertilizer Manufacturers

LION

Nitrogen

FERTILIZER MATERIALS

LION ANHYDROUS AMMONIA—For formulation. A uniformly high-quality basic product. Nitrogen content, 82.25%.

LION AQUA AMMONIA—For formulation or acid oxidation. Ammonia content about 30%. Other grades to suit you.

LION AMMONIUM NITRATE FERTILIZER—For direct application or formulation. Improved spherical pellets. Guaranteed 33.5% nitrogen.

LION NITROGEN FERTILIZER SOLUTIONS—For formulation. Three types to suit varying weather and manufacturing conditions.

LION SULPHATE OF AMMONIA—For direct application or formulation. Large free-flowing crystals. Guaranteed nitrogen content, 21%.

TECHNICAL SERVICE—Lion provides special technical assistance for fertilizer manufacturers. Write to CHEMICAL SALES DIVISION for quick service.

LION OIL COMPANY

EL DORADO, ARKANSAS

PROUD OF YOUR PRODUCT?

Prove it with CHASE MULTIWALL Paper Bags

Prove it to Your Distributors and Dealers...

Prove it to Your Consumers

Prove it to Your Balance Sheet

Are you proud of the high quality of your fertilizers?

You *can* give *visible* evidence of superiority by packaging in CHASE Multiwall bags. This *preferred* bag is backed by 107 years of CHASE experience...experience in developing the finest material and workmanship...experience in fine printing...experience in Multiwall bag manufacture that assures CHASE customers of QUALITY bags on every order.

IT'S THE PACKAGE THAT GIVES YOU THESE EXTRAS...

1. Better appearance.
2. Clean, colorful brand printing.
3. More sales appeal.
4. Better protection for your product.
5. A bag designed for your specific problem.
6. Better acceptance of your brand.

CHASE BAG COMPANY 309 WEST JACKSON BOULEVARD • CHICAGO, ILLINOIS

Republic

top-analysis AMMONIUM SULPHATE

NOW AVAILABLE TO FERTILIZER BLENDERS IN CARLOAD LOTS—bulk or bagged

Additional capacity at Republic Steel means that you now can have more top-quality Ammonium Sulphate for your fertilizer blends and mixes.

Republic's free-flowing Ammonium Sulphate, in bulk form or bagged, is ready to be shipped to you in carload lots promptly and at regular intervals to meet the needs of your blending and mixing operations.

For information on Republic Ammonium Sulphate, contact or write to:

REPUBLIC STEEL CORPORATION
REPUBLIC BUILDING • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

Republic REPUBLIC STEEL
AMMONIUM SULPHATE

COMMERCIAL FERTILIZER

ESTABLISHED 1910

February, 1954

Vol. 88 No. 2

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What do we know about your business?

There's profit in granulated fertilizer

The advantages of granulated fertilizer are numerous. It spreads better, it stores better, it sells better. However, a shortage still exists due to limited productive facilities.

To help build the production of this superior fertilizer, the Harte Company has obtained the license for the Davison granular process, developed by the Davison Chemical Company. Now all steps in granualr fertilizer manufacture—from site study and planning to construction and production—are combined into one system—the Harte system.

Should you plan to build a granular fertilizer plant, consider the Harte system. There is none other so comprehensive, so fast, so economical. For more information, contact any of our offices. There's no obligation.

JOHN J. HARTE COMPANY | ENGINEERS CONSTRUCTION MANAGERS

ENGINEERS IN THE FOLLOWING PROCESSES: • Solvent Extraction Systems • Rubber Products • Vitamin Recovery • Synthetic Detergents • Insecticide Plants • Clay Processing • Mixed Fertilizer Plants • Granular Fertilizer Plants • Paper Mills • Electrolytic De-Tinning • Lime and Cement • Phosphoric Acid Plants • Glass • Explosives • Petrochemicals • Cotton Mills • Food Canning Plants • Industrial Warehousing • Steam Generating and Power Plants • Milk By-Products • Superphosphate Plants

284 TECHWOOD DRIVE, N. W., ATLANTA • NEW YORK • HOUSTON • MEXICO, D. F. • HAVANA • SYDNEY, AUSTRALIA

This month United States Steel ads recommend high-nitrogen fertilizers to

1,547,000 Farmers!

Pasture yield raised 33%
with high-nitrogen fertilizer
on the farm of Gale and Clarence Chase,
Sun Prairie, Wisconsin
Ross Tuckwiller of Lewisburg, W. Va., found that
Greener, lusher pastures begin with NITROGEN
Spring application of 10-10-10 raised his pasture yield

• United States Steel advertisements are now featuring case histories on the advantages of high-nitrogen fertilizers. They tell of profitable yield increases and lusher, more productive pastures that have saved money in reduced feed costs. U.S. Steel ads running in February in the leading farm publications have a combined circulation of over 1,547,000.

Some ads have featured messages from noted agronomists urging the use of high-nitrogen fertilizers to help pastures overcome the damaging effects of last year's drought. They advised *earlier* application this year to promote earlier growth. This means earlier sales.

Be sure your dealers are ready for the increased demand by being adequately supplied with 8-8-8 and 10-10-10. And be sure that the major nitrogen source in your mixed fertilizers is U·S·S Ammonium Sulphate. Farmers will be looking for it more this year . . . they know it means "better nitrogen for better yields".

For better sales use U·S·S Ammonium Sulphate . . . and let the farmers *know* it. Take advantage of this promotion. Get full information on U·S·S Ammonium Sulphate from our nearest Coal Chemical sales office, or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S AMMONIUM SULPHATE

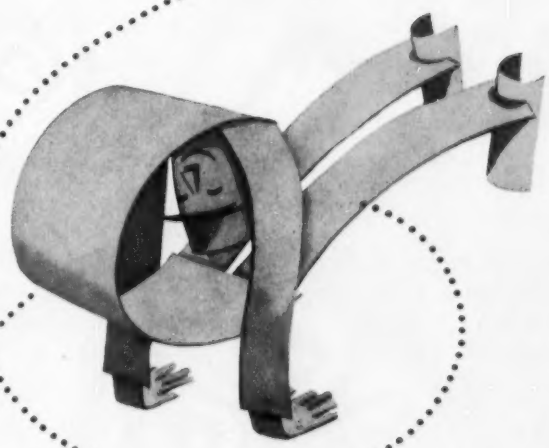
4-468

UNITED STATES STEEL

ALBEMARLE INTEGRATION

means

FLEXIBILITY



ALBEMARLE'S Multiwall Bag operation is, in many ways, as flexible as its Trade Figure! That is because Albemarle is a completely integrated mill . . . growing its own pulp wood, milling, coloring and printing its own stout Kraft paper, making its own plain and valved, pasted and sewn Multiwall bags in many plies.

Such flexibility means much to customers who want expert color matching, sharp printing and reliable deliveries.

ALBEMARLE PAPER MANUFACTURING COMPANY • RICHMOND, VIRGINIA

EASTERN SALES OFFICE: NEW YORK CITY • SOUTHERN SALES OFFICE: BALTIMORE, MD.

MIDWEST SALES OFFICE: CHICAGO, ILLINOIS

JUST AROUND THE CORNER

By Vernon Mount

SHIFT FROM FDR TO IKE is a shift from Federal invasion of economic and social matters to put the problems up to the States instead. That makes it a matter of local option whether people shall, or not, be coddled.

STATES RIGHTS PEOPLE will be very pleased by this...and that includes the State-level politicos, who must rise in wrath at every hint of state-rights invasion. So it should be a popular move...until...

STATE TAXES CLIMB because the cost has been shifted to local instead of the Federal Government. With Federal financial backing there will be a natural temptation for each local political unit to become a local Santa. But the citizen, who feels a lot more ability to control his local government than the remote Great White Fathers in Washington, will surely put on the brakes when his leaders go too far. On the other hand, if there is a real need, he can see it with his own eyes - and is more likely to accept the responsibility as a taxpayer.

HELPING PEOPLE HELP THEMSELVES, instead of just helping people, can make a lot of difference in the character of the upcoming generations.

Yours faithfully,

Vernon Mount

A RAYMOND
MULTI-WALL PAPER SHIPPING SACK
has the strength of one or more Shipping Sacks (according to specifications) combined into one multi-wall Shipping Sack.
This multi-wall construction is the secret to the unbelievable strength of RAYMOND MULTI-WALL PAPER SHIPPING SACKS.
R

These tough, strong, dependable Fertilizer Shipping Sacks are CUSTOM BUILT to the packers' and shippers' needs. They are made in various types, sizes, and strengths. Available printed or plain.

THE RAYMOND BAG COMPANY
Middletown, Ohio

RAYMOND
MULTI-WALL PAPER SHIPPING SACKS

...and the corn came tumblin' down

DESTRUCTIVE SUB-SURFACE PESTS feast on tender young corn roots at just the time the new plants most need support. Plant growth is stunted . . . and root structure is so weakened by these attacks that a wind can lay entire fields flat.

Shell Chemical offers a potent weapon against such attack—aldrin. Easily applied before or during corn planting as a spray or in fertilizer mixtures, aldrin *kills these pests* . . . the corn rootworms, wire-worms, white grubs, seed-corn maggots, grape colaspis . . . and others.

Aldrin makes up readily into emulsible concentrate, dust, wettable powder and granular formulations. Aldrin is backed by State and Federal recommendations, the finest of technical service, and a comprehensive advertising campaign. Write for technical literature and further sales information.

aldrin

SHELL CHEMICAL CORPORATION

AGRICULTURAL CHEMICALS DIVISION
P. O. BOX 1617, DENVER 1, COLORADO

Atlanta • Houston • Los Angeles • New York • San Francisco • St. Louis • Jackson, Miss. • Portland, Oregon

EXACT WEIGHT Sacking Scales Cut Labor Costs... Eliminate Over-weights

One simple operation does the work of three with the EXACT WEIGHT Sacking Scale. One man can bag, weigh, and check over 100 tons of bulk, free-flowing chemicals per day from overhead hopper to foot-level conveyor. The saving in labor costs, together with the saving from elimination of over-weights, can pay for the installation.

Simple to operate, the EXACT WEIGHT Sacking Scale has only two controls. It takes just four easy motions to attach a bag, fill it, weigh it, and release to conveyor. Built for hard service with agate bearings set in metal, alloy-steel pivots with hard chromed finish, and fittings of stainless steel and brass. Scale will handle multi-wall paper, paper-lined cotton, or burlap bags. Available with automatic valves. Write for full details today!

Exact Weight Scales

Better quality control
Better cost control

THE EXACT WEIGHT SCALE COMPANY

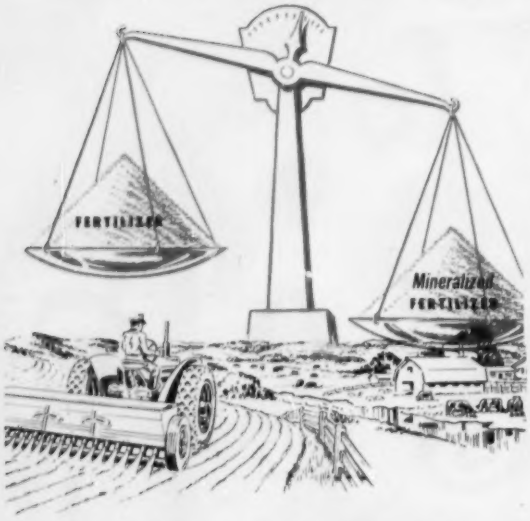
906 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

SALES and SERVICE
in all principal cities
from coast to coast and
Canada

Mineralize

FOR

INCREASED TONNAGE!



Growers of today realize more and more the necessity of minerals in the soil if they are to realize optimum production. They are buying more mineralized fertilizer because the results have proven conclusively these fertilizers produce greater yields. The addition of minerals to your fertilizer will stimulate sales and create new business through the growers' increased yield of vitamin-rich crops.

As basic producers of minerals we would like to discuss with you the advantages of mineralized fertilizers and how you can step up your fertilizer tonnage and profits through the addition of minerals.

With the Tennessee Corporation as your supplier, you are sure of uniform high quality and personal attention to specific needs.

SOLUBLE

TRACE MINERALS

Tennessee's trace minerals are soluble and their nutritional value is immediately available to the plant. Soluble trace minerals are more economical and faster acting.

For detailed information, phone, wire or write—

TENNESSEE TC CORPORATION

617-29 Grant Building, Atlanta, Georgia

S

STEDMAN

FERTILIZER PLANT EQUIPMENT

Established in 1834

All Steel Self-Contained Fertilizer Mixing and Bagging Units

Batch Mixers — Dry Batching
Pan Mixers — Wet Mixing

Tailings Pulverizers – Swing Hammer and Cage Type

Vibrating Screens **Dust Weigh Hoppers**

Acid Weigh Scales **Batching Hoppers**

Belt Conveyors — Stationary and Shuttle Types

Bucket Elevators **Hoppers and Chutes**

STEDMAN FOUNDRY & MACHINE COMPANY, INC.
Subsidiary of United Engineering and Foundry Company
General Office & Works: AURORA, INDIANA

All burlap alike?
Not by a jugful!
There are various grades of burlap and, of course, variations within those grades.
But, when you buy burlap bags, there's a sure way to get the quality of burlap you pay for: Rely on Bemis.*
You can always look to Bemis for the best in burlap!
*Producers and users alike accept Bemis' grading of Indian burlap as the standard for the industry.
Bemis
BEMIS BRO. BAG COMPANY
General Offices—St. Louis 2, Mo.
Sales Offices in Principal Cities

FIRST in the Field...

FIRST with direct simple motor drive on distributor. For even width of spreading, along with the ground drive and its positive, even volume control, this feature enables you to do a better spreading job with either single or double distributors. That's why you see more Baughman's on the highways than all others.

FIRST to develop new DIRECT GROUND SPEED DRIVE. Eliminates gear reduction cases, power take-offs, hanger shafts, bearings, etc., eliminates 75% of replacements. Doubles spreading speed. Does away with "spotting" due to variations in speed and gear-shifting.

1. FIRST to pioneer truck-mounted spreading.
2. FIRST truck spreader with either belt or chain conveyor.
3. FIRST truck spreader with single distributor.
4. FIRST truck spreader with double distributor. (used originally for marl).
5. FIRST truck spreader with worm reduction drive.
6. FIRST truck spreader with straddle bearings in worm reduction drive.
7. FIRST truck spreader with forged steel hub in (Navy) bronze ring gear.
8. FIRST truck spreader to use under-slung distributor.
9. FIRST to use 38° sloping sides. (later optional only; 45 degree standard).
10. FIRST to develop both center and rear dump for year 'round hauling.
11. FIRST to develop wooden "V" type body.
12. FIRST to furnish catwalks or wheel guards.
13. FIRST to use combination steel and wooden bodies.
14. FIRST to build all-steel bodies.
15. FIRST to use alloy steel in spreader bodies.
16. FIRST to pioneer fertilizer spreading with "V" type body.
17. FIRST to develop cross type fertilizer and fine lime spreader (Model "O").
18. FIRST to develop hood type spreader; (used in Europe for several years) before introducing in competition with Model "O" spreader for wind control of powdered lime and fertilizer.
19. FIRST and only hood to direct spread to ground, tapering spread for perfect lapping, instead of stopping material and leaving heavy streaks.
20. FIRST to use compartmentalized body for multiple loads.
21. FIRST to develop trouble-proof trip doors.
22. FIRST to use a positive numbered feed adjusting door with 64 distinct settings, always giving same volume.
23. FIRST to build a transport with hydraulically suspended rear conveyor for hauling and transporting bulk.
24. FIRST to use large, double swinging endgate.

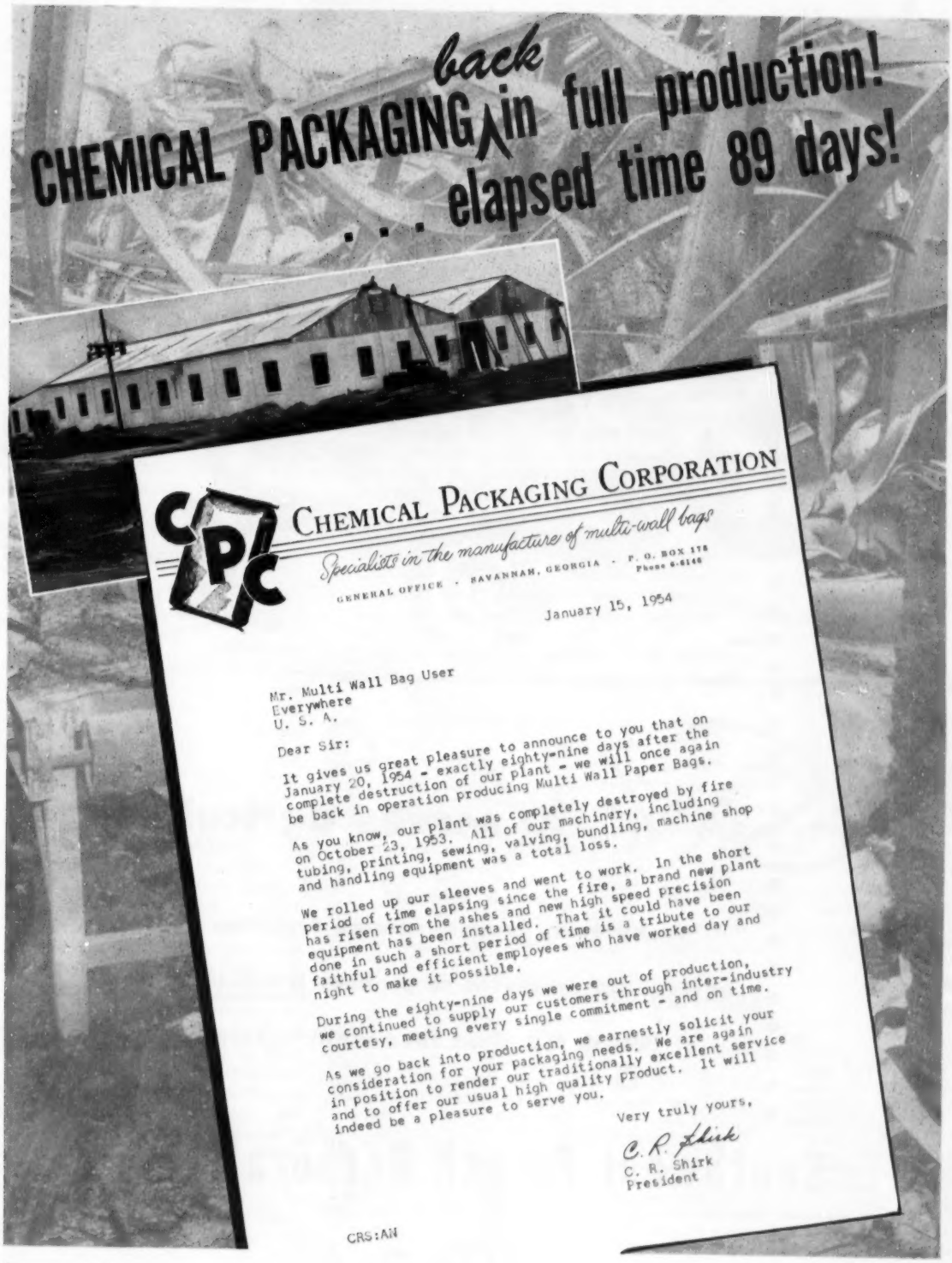
Baughman

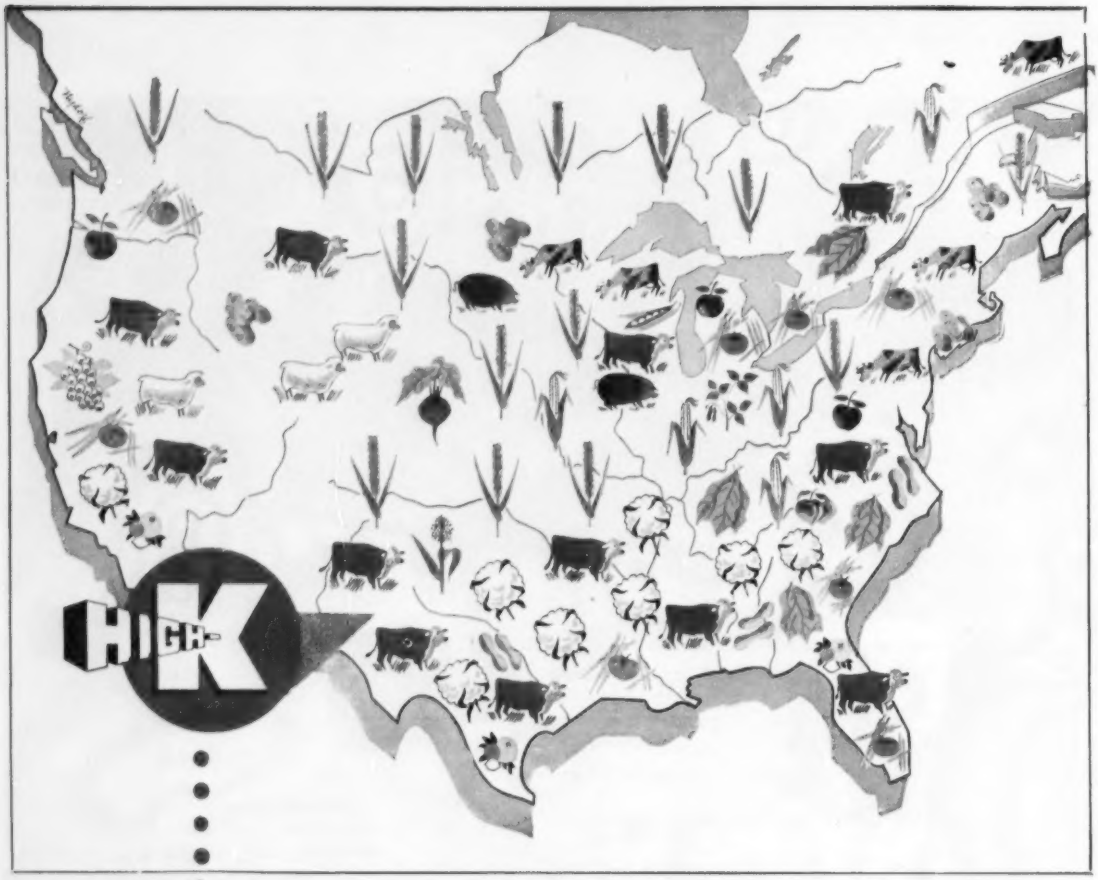
THE "FIRST" CHOICE OF OVER 60,000 USERS—

Backed by more than 20 years' specialized experience in the development of fertilizer spreaders.

BAUGHMAN MANUFACTURING COMPANY

142 SHIPMAN ROAD • JERSEYVILLE, ILLINOIS


back
CHEMICAL PACKAGING in full production!
. . . elapsed time 89 days!
CHEMICAL PACKAGING CORPORATION
Specialists in the manufacture of multi-wall bags
GENERAL OFFICE · SAVANNAH, GEORGIA · P. O. BOX 178
Phone 6-6146
January 15, 1954
Mr. Multi Wall Bag User
Everywhere
U. S. A.
Dear Sir:
It gives us great pleasure to announce to you that on January 20, 1954 - exactly eighty-nine days after the complete destruction of our plant - we will once again be back in operation producing Multi Wall Paper Bags.
As you know, our plant was completely destroyed by fire on October 23, 1953. All of our machinery, including tubing, printing, sewing, valving, bundling, machine shop and handling equipment was a total loss.
We rolled up our sleeves and went to work. In the short period of time elapsing since the fire, a brand new plant has risen from the ashes and new high speed precision equipment has been installed. That it could have been done in such a short period of time is a tribute to our faithful and efficient employees who have worked day and night to make it possible.
During the eighty-nine days we were out of production, we continued to supply our customers through inter-industry courtesy, meeting every single commitment - and on time.
As we go back into production, we earnestly solicit your consideration for your packaging needs. We are again in position to render our traditionally excellent service and to offer our usual high quality product. It will indeed be a pleasure to serve you.
Very truly yours,
C. R. Shirk
C. R. Shirk
President
CRS:AN



Southwest serves agriculture

...by using modern mining facilities and up-to-date processes to produce HIGH-K* Muriate of Potash for plant food manufacturers.

Southwest Potash Corporation

HIGH-K Potash

*Trade-mark

61 BROADWAY ★ NEW YORK 6, N. Y.

NFA Leaflets Extend Program

As an extension to the program, fully reported here, by which NFA, working with the Land Grant Colleges, is showing farmers the extra benefits from following the College fertilizer recommendations, they have begun publication of a series of inexpensive folders, state by state, which tell this story graphically.

The first one, for South Carolina, has reached us. Charts in it were the joint work of NFA and Clemson. Georgia is ready. Kentucky is next, and so on through the list of states and regions where these studies have been and are being completed.

They should make excellent salesbuilders. Space is provided for imprint of the company name. And cost to NFA members is $3 per hundred, which is slightly below reproduction cost.

Pacific NW Assn. Compiles Dealer List

Members of the Pacific Northwest Plant Food Association are being asked to send in, in the strictest confidence, their dealer list. This will be compiled into a master list, used for educational purposes by the Soil Improvement committee. Response has been excellent, they report.

CFA Picks 1954 Convention Site

The Board of Directors of the California Fertilizer Association today chose the del Coronado Hotel at Coronado for the location of its Thirty-first Annual Convention. The dates named are Monday and Tuesday, November 15 and 16, 1954.

"Interest in the annual convention of the Association is increasing each year," reports President B. H. Jones of Fresno. "We expect 400 or more will participate in this year's business sessions and in the recreation to be provided. This location was chosen because of the unexcelled facilities, and because all of our people can be housed under one roof."

Excellent program and recreational features are being arranged by Committees headed by Thomas A. Lathe and Mr. and Mrs. Rod Taft, all of Los Angeles.

Sidney H. Bierly, Association Manager, has announced that all arrangements for room reservations are being taken care of by the Hotel.

It Seems to Me

by BRUCE MORAN

No matter how the Congress goes on the Eisenhower farm program, big crops will continue the order of the day. The emphasis has just been shifted from destruction and limitation to the far more sensible one of trying to find markets for what our farmers raise.

Of course, if they can find expanded markets to fit the expanded production-per-acre for which we may take credit as an industry . . . and if they will do the things we advocate, which will make each acre's crop at a lower cost . . . and if the combination of these helps the farmer to live in the style to which he has become accustomed . . . then everyone in Agriculture can be very happy.

The millenium when all these things meet in one joyous ring-around-a-Rosie has not come. There's a lot of work to be done to bring it about. The Government; the Land Grant Colleges and their extension forces; the county agents; the national and local-level associations; our own salesmen—and last, but not least, ourselves, must get busier and stay busier to bring it about.

That way it can be done, it seems to me.

Two Meetings in Oregon

Oregon State College, with USDA cooperating, held three meetings—one state-wide on the OSC campus January 21, where the soil fertility program was outlined for 1954, another in the Northern Willamette Valley January 26 where local fertilizer trials and soil testing results were summarized and where local fertilizer recommendations were reviewed. The third in Southern Willamette Valley on February 9 with the same sort of program localized to that portion of the Valley.

INDUSTRY CALENDAR

Date	Organization	Place	City	State
Feb. 19	Joint Ag-Ind	Palmer House	Chicago	Ill.
Feb. 19	Can. A.C.A.	Royal York	Toronto	Canada
March 7-9	Sou Safety	Brown Hotel	Louisville	Ky.
May 4-6	N. C. Safety		Raleigh	N. C.
May	Va. Safety			Va.
May	Md. Safety			Md.
June 10-12	APFC	Homestead	Hot Springs	Va.
June 14-16	NFA	Greenbrier	White Sulphur	W. Va.
July 20-22	Pacific Conference	Klawath Falls AF[illegible]		Oregon
Nov. 10-12	NFA	Hollywood Beach Hotel	Hollywood	Fla.
Nov. 15-16	CFA	del Coronado Hotel	Coronado	Cal.
Dec. 2-3	Cotton Insect	Adolphus	Dallas	Texas

MIDWEST SOIL SPONSORS OF FEBRUARY CHICAGO MEETING

Soil testing and factors affecting the time of application of fertilizer will be the key subjects discussed by soils research men at the annual Joint Meeting of Midwestern agronomists and fertilizer industry representatives at the Palmer House in Chicago, Friday, February 19.

An attendance of more than 400 is expected at the meeting sponsored by the Middle West Soil Improvement Committee. Agronomists and fertilizer company personnel will exchange viewpoints in question and answer sessions following presentation of the reports.

Pointing up the increasing importance of the meeting, invitations have been extended to members of allied industries including farmers and representatives of companies and organizations in the seed, chemical, farm machinery, supplies, equipment and transportation fields.

Chairman of the meeting will be Dr. F. W. Smith, Kansas State College. Thirteen state agricultural colleges and experiment stations will be represented at the meeting. H. S. Vorhes, president of the Middle West Soil Improvement Committee, and Z. H. Beers, executive secretary, will welcome the soils men and visitors.

Four agronomists will report on various aspects of soil testing at the Friday morning session.

George E. Smith, University of Missouri, will open with a discussion on "Fundamental Principles Involved in Soil Testing." John Hanway, Iowa State College, will deal with "Correlating Soil Test Information with Crop Response."

"Writing the Soil Fertility Prescription with Aid of Soil Test Information" will be the subject of a report by K. C. Berger, University of Wisconsin. Paul M. Burson, University of Minnesota, will discuss "Reporting Soil Test Information to Farmers."

The afternoon program will be devoted to discussions on the time of fertilizer applications and on future developments in soils and crops and what these mean to the fertilizer industry.

Edward H. Tyner, University of Illinois, will report on "Principles Involved in Selecting Time for Application of Fertilizer." Paul T. Truitt, president of the American Plant Food Council, will discuss "Fertilizer Production Facilities."

"What Does the Future Offer for the Fertilizer Industry?" will be the subject of a report by Harold E. Myers, Kansas State College. A. J. Ohlrogge, Purdue University, will present the agronomists' list of recommended fertilizer grades and ratios for 1954.

Soils men will attend conferences of the North Central Soils Research Committee at the Palmer House for three days preceding the Joint Meeting. Dr. G. W. Volk, Ohio State University, is chairman of the group.

As a further step in expanding the Joint Meeting's scope, invitations for the first time have been extended to soils extension men from each of the 13 Midwestern states to be present on February 18 and 19. This will provide an interchange of ideas, techniques and information which may help strengthen the extension program over the entire Corn Belt. E. R. Duncan, Iowa State College, and George Gist, Ohio State University, will serve as interim co-chairmen until the extension men elect their own chairman.

COTTON MECHANIZATION MEET IN LITTLE ROCK, JULY 28-30

The eighth annual Beltwide Cotton Mechanization Conference will be held in Little Rock, Ark., July 28-30, Claude L. Welch, director of the production and marketing division, National Cotton Council, has announced.

Pre-harvesting cotton production practices will be emphasized at this year's meeting, Mr. Welch said, with a field demonstration scheduled on the farm of Cotton Council President Harold A. Young, about 15 miles from Little Rock.

R. Flake Shaw, Greensboro, executive vice president of the North Carolina Farm Bureau Federation, is chairman of the mechanization conference steering committee.

Other committee members include: Rex F. Colwick, State College, Miss., correlator, Regional Cotton Mechanization Project; Frank P. Hanson, Peoria, Ill., assistant manager, merchandising department, Caterpillar Tractor Co.; Dr. Louis E. Hawkins, Stillwater, vice director, Oklahoma Agricultural Experiment Station.

Robert A. Jones, Chicago, executive secretary, Farm Equipment Institute; S. P. Lyle, Washington, assistant to the chief, Division of Agricultural Programs, Extension Service, USDA; R. M. Merrill, Moline, Ill., engineer, Product Research Division, Deere & Company.

J. R. Tavernetti, Davis, agricultural engineer, California Agricultural Experiment Station; George B. Nutt, Clemson, S. C., head, agricultural engineering department, Clemson Agricultural College; E. F. Schneider, Chicago, vice president, International Harvester Co.; H. P. Smith, College Station, department of agricultural engineering, Texas A&M College System.

Charles Curtis, Baton Rouge, La., farm mechanics specialist, State Department of Education; C. E. Frudden, Milwaukee, consulting engineer, Allis-Chalmers Manufacturing Co.; Don L. Jones, Lubbock, Texas, superintendent, Lubbock Agricultural Experiment Station.

George Kelly, Longview, Texas, president, G. A. Kelly Plow Works; Dr. E. G. McKibben, Beltsville, Md.,

director, agricultural engineering research, Bureau of Plant Industry, Soils and Agricultural Engineering, USDA; Philip H. Noland, Louisville, vice president, Minneapolis-Moline Co.; Dr. C. R. Sayre, Scott, Miss., president, Delta & Pine Land Co.; Ritchie Smith and Claude L. Welch, Memphis, National Cotton Council.

A sub-committee in charge of planning the program for the conference includes: C. A. Vines, Little Rock, associate director, Arkansas Extension Service; Kyle Engler, head of the agricultural engineering department, University of Arkansas; Dr. Lippert S. Ellis, dean, College of Agriculture, University of Arkansas; and Joe C. Hardin, Grady, president of the Arkansas Farm Bureau Federation.

Dr. Hawkins, Mr. Nutt, Mr. Frudden, Mr. Hansen, Mr. Lyle, Mr. McKibben, and James A. Davis, Memphis, National Cotton Council, also are sub-committee members.

Paul T. Truitt (right) President of the American Plant Food Council, announces that Dr. Willard H. Garman, Experiment Station Administrator, U. S. Department of Agriculture, for the past five years, has been appointed Council Agronomist.

DR. GARMAN JOINS APFC

Dr. Willard H. Garman, for nearly five years the Experiment Station Administrator and Soil Scientist in the Office of Experiment Stations, Agricultural Research Service, U. S. Department of Agriculture, became Agronomist for the American Plant Food Council February 1, Paul T. Truitt, President of the Council has announced.

A native of Cherry Tree, Pa. where he was born October 21, 1912, Dr. Garman succeeds Dr. John R. Taylor, Jr., who recently resigned to accept a position with private industry.

Prior to his position with the Office of Experiment Stations, Dr. Garman served as head of the Department of Agronomy, Agricultural Experiment Station, University of Arkansas, from November 1947 through May 1949. Previously, he was a soil scientist with the South Carolina Agricultural Experiment Station, an assistant and associate professor of agronomy at the University of Georgia, and assistant chemist with the Texas Agricultural Experiment Station. He served in the Navy in World War II on the staff of Admiral Nimitz.

Dr. Garman, from September 1936 through June 1939, did graduate research teaching at The Pennsylvania State College, where he received his Ph.D. in 1939. He received his B.S. degree in 1933 and his Master of Science degree in 1934, both at Penn State.

Dr. Garman now is chairman of the National Soil and Fertilizer Research Committee, and also is chairman of the Committee on Intersociety Cooperation, American Society of Agronomy. He is an ex-officio member of the National Advisory Committee for Soil-Water-Fertilizer Research to the U. S. Department of Agriculture, and is immediate past president of the Southern Branch, American Society of Agronomy.

He is a fellow in the American Association for the Advancement of Science and a member of Sigma Xi, honorary scientific fraternity; Gamma Sigma Delta, honorary agricultural fraternity; American Society of Agronomy, Soil Science Society of America, and International Soil Science Society.

He is the author of numerous scientific articles which have been published in many of the Nation's leading scientific journals. He also is the author of many bulletins in the field of soil fertility.

Mr. Truitt said that "the Council and the fertilizer industry are fortunate in acquiring the services of such a distinguished soil scientist as Dr. Garman, whom we are confident will help further implement the fine working relationships that we enjoy with the land-grant colleges and scientific organizations throughout the country."

Dr. Garman is married, has two children ages 12 and 14, and resides at 5136 10th Road North, Arlington 5, Va.

Georgians Hold Joint Meeting

Replacing the separate lime, fertilizer and seed meetings held last year, the Georgia State ASC committee, the Extension Service and the Soil Conservation Service, with the aid of the Georgia Plant Food Educational Society held a joint meeting January 21 in Macon. The chief topic was the 1954 Conservation program.

PRELIMINARY REPORT ON

COMMERCIAL FERTILIZER CONSUMPTION FOR THE YEAR ENDING JUNE 30, 1953

By

WALTER SCHOLL, HILDA M. WALLACE, AND ESTHER I. FOX
Soil and Water Conservation Research Branch
Agricultural Research Service
U. S. Department of Agriculture
Beltsville, Maryland

Commercial fertilizers, estimated to have been consumed in the United States, including the Territories (Hawaii, Puerto Rico, and Alaska) for the year ended June 30, 1953, amount to 23,143,000 tons. This quantity represents an increase of 3.2 percent or 711 thousand tons more than the 22,432,418 tons reported for the 1951-52 season. Consumption of commercial mixtures was estimated to be 15,508,000 tons, of materials containing primary plant nutrients (N, P_2O_5, K_2O) for direct use, 6,765,000 tons, and of secondary and minor element materials, 870 thousand tons. The respective increases for these classes are 2.8 percent, 3.1 percent, and 10.8 percent above their consumption in 1951-52.

For preparing these estimated totals by regions, the quantity of fertilizers consumed in each State was determined from shipments reported by all of the large producers normally supplying more than 80 percent of the national total consumption and most of the small manufacturers. These quantities were correlated with the tonnage reports issued by States and adjusted for government distribution. State summaries were available from all but 14 States. No summaries were available from the Territories. Total consumption figures for 38 States and two of the Territories were considered to be 100 percent. The primary nutrients contained in mixtures consumed in these States and Territories were based on the guaranteed analysis of each grade and the total adjusted for overruns or underruns. The

Table 1.—Preliminary totals of fertilizers consumed, year ended June 30, 1953[1/]

Region	Mixtures	All fertilizers[2/]	Relative consumption[3/] 1951-52 = 100
	1,000 tons	1,000 tons	percent
New England[4/]	390	463	95
Middle Atlantic[5/]	1,798	2,102	103
South Atlantic[6/]	5,025	6,148	99
East North Central[7/]	3,661	5,037	111
West North Central[8/]	1,229	2,092	120
East South Central[9/]	2,050	3,173	93
West South Central[10/]	719	1,399	95
Mountain[11/]	64	331	100
Pacific[12/]	303	2,022	109
Continental U. S.	15,239	22,767	103
Territorial[13/]	269	376	99
Total: 1952-53	15,508	[14/]23,143	103
1951-52	15,086	[14/]22,432	100
1950-51	13,978	[14/]20,991	94

1/ Includes fertilizers distributed by government agencies.

2/ Includes: colloidal phosphate and phosphate rock, basic slag, processed manures, sewage sludge, secondary and minor element materials, such as, borax, sulfur, metallic salts, etc., used as separate materials, and mixtures. Does not include liming materials, but includes gypsum. Excludes materials used in the manufacture of commercial mixtures.

3/ Materials not guaranteed to contain N, P_2O_5, or K_2O are excluded from ratios.

4/ Maine, N.H., Vt., Mass., R.I., Conn.

5/ N. Y., N. J., Pa., Del., D. C., Md., W. Va.

6/ Va., N. C., Ga., Fla.

7/ Ohio, Ind., Ill., Mich., Wis.

8/ Minn., Iowa, Mo., N. D., S. D., Neb., Kan.

9/ Ky., Tenn., Ala., Miss.

10/ Ark., La., Okla., Tex.

11/ Mont., Idaho, Wyo., Colo., N. Mex., Ariz., Utah, Nev.

12/ Wash., Oregon, Calif.

13/ Hawaii, P. R., Alaska.

14/ Materials not guaranteed to contain N, P_2O_5, or K_2O included in 1952-53 totals 870,000 tons; in 1951-52, 785,050 tons; and in 1950-51, 645,441 tons.

primary nutrients contained in the materials consumed in these States were based on their average analysis as reported in the bulletins of the State Fertilizer Control Laboratories. For all the other States, the estimates were considered to be well within 5 percent above or below actual consumption.

The preliminary totals for the 9 regions of the Continental United States and the Territories tabulated in Table 1, indicate consumption of fertilizers in the North Central and the Pacific regions was 9 to 20 percent more than during the 1951-52 season. At the same time, fertilizer use is discernible lower by 5 to 7 percent in the New England and South Central regions. Whereas, for the remaining regions and the Territories, consumption is indicated to range from one percent below to 3 percent above that in 1951-52.

Consumption of the primary plant nutrients, as tabulated in Table 2, amounted to 5,562,000 tons. This is a net increase of 359 thousand tons or 6.9 percent more than the revised total of 5,203,003 tons consumed in 1951-52. The net increase in nitrogen is 194 thousand tons (13.7 percent), available P_2O_5 34 thousand tons (1.5 percent), and K_2O 131 thousand tons (8.3 percent). The amounts and proportions of the nutrients consumed in mixed fertilizers were 718 thousand tons or 44.4 percent of the nitrogen, 1,755,000 tons (78.6 percent) of the available P_2O_5, and 1,528,000 tons (89.2 percent) of the K_2O. The highest increase in nutrients was in the nitrogen supplied by materials for direct application. These accounted for 124 thousand tons of the increase in nitrogen. Although mixtures supplied 74 thousand tons more available P_2O_5 than in 1951-52, its use in direct application materials dropped 40 thousand tons. The use of potash (K_2O) increased 107 thousand tons in mixtures and 24 thousand tons in materials for direct application.

The weighted average plant nutrient contents of mixtures, estimated for this report, are shown in Table 2. The national average increased from 24.86 percent in 1951-52 to 25.8 percent in 1952-53. This average, in 1952-53, comprised, nitrogen 4.6, available P_2O_5 11.3, and K_2O 9.9 percent. The values for these nutrients are 0.3, 0.2, and 0.4 higher than reported for 1951-52. The average nutrient content of mixtures consumed in each region and the Territories was higher than in 1951-52. The net gain in value of the nutrient content of mixtures consumed in the Mountain region was 2.6 percent. Approximately one-half of this value was the result of increasing the content of K_2O in mixtures. In the West North Central region, the nutrient content of nitrogen increased from 5.08 percent in 1951-52 to 6.1 percent in 1952-53. This was the highest change in value of the nitrogen content of mixtures shown by any other region.

While the tonnage of fertilizers consumed in the New England and West South Central regions are indicated to be 5 percent below the consumption in 1951-52, approximately the same quantity of nutrients were consumed due to the use of higher analysis fertilizers. The average plant nutrient content of all fertilizers containing primary plant nutrients consumed in these regions was 27.4 and 27.8 percent in comparison with 26.35 and 26.07 (revised) percent in 1951-52, respectively. Higher analysis fertilizers have changed the order of highest consuming regions. Although, the total consumption of fertilizers is still the highest for the South Atlantic region where consumption amounted to 6,074,000 tons of primary nutrient bearing fertilizers in comparison with 5,036,000 tons in the East North Central region, the nutrient content was but 1,308,000 tons compared with 1,320,000 tons in the East North Central region. In terms of primary nutrients, this latter region is now the highest consuming area. The average nutrient content of fertilizers consumed in the South Atlantic region was 21.5 percent in comparison with 29.4 percent for the East North Central region.

Table 2.—Preliminary totals of primary plant nutrients contained in all fertilizers and average content of mixtures, year ended June 30, 1953

Region	N	Available P_2O_5 [1]	K_2O	Total	Relative consumption 1951-52 = 100	Weighted average content of mixtures
	1,000 tons	1,000 tons	1,000 tons	1,000 tons	percent	percent
New England	25	49	52	126	99	28.4
Middle Atlantic	101	250	171	522	105	25.6
South Atlantic	386	489	451	1,308	101	21.6
East North Central	234	530	556	1,320	116	30.1
West North Central	179	304	132	615	129	33.0
East South Central	253	292	199	744	95	23.0
West South Central	151	152	85	388	101	26.0
Mountain	46	53	3	102	100	32.4
Pacific	205	94	28	327	110	26.3
Continental U. S.	1,562	2,213	1,677	5,452	107	25.7
Territorial	54	20	36	110	101	29.2
Total: 1952-53	1,616	2,233	1,713	5,562	107	25.8
1951-52 [2]	1,422	2,199	1,582	5,203	100	24.86
1950-51	1,237	2,110	1,380	4,727	91	24.19

[1] Includes 2 percent of the colloidal phosphate and 3 percent of the phosphate rock marketed for direct application, as available P_2O_5.

[2] Revised.

Seed Processing

We have had inquiry concerning the processing of seeds, and believe there is sufficient demand for an article to supplement what has already been published here on the subject in the past several years. Hence we made a "sampling" of information—without any effort to cover the available sources completely—and what follows is, we believe, reasonably typical, though it obviously does not cover the entire field of processing or of processing materials.

PELLETING

Pelleting of seeds is a patented process whereby individual seeds of various types are coated with inert materials so as to increase size, and form spherical uniform pellets that can be readily space planted." This is the opening sentence in a very sensible folder published by Processed Seeds, Inc., Midland, Michigan, who do custom pelleting of vegetable, flower, field, tree and grass seed, and who are originators of the process they describe as follows:

"The seeds are pelleted while rolling free in a batch process and thus through the size of batch the compression of the coating material on the seed is accurately controlled so that injury to the seed is avoided.

"The inert materials used in the coating process are varied to some extent depending on the type of seed being coated. Many seeds require aeration for germination so that an irregular shaped particle material is used on these types that will allow more interstices and thus make the coating more porous. Other seeds desire a drier condition for germination and are coated with a flat shaped particle material that tends to retard surplus moisture, thus increasing germination. Varying particle materials can be mixed so as to make the most desirable type of coat for any particular seed. Also through this method hardness of the coat can be controlled.

"The inert coating is held tightly on the seed by a water soluble nontoxic plastic material that will dissolve when in contact with soil moisture. The pellets will soften as soon as eighteen per cent moisture is present in the pellet and thus allow emergence of the seedling through the coat. The coating may or may not disintegrate in the soil but in all cases will soften so as to allow germination before enough moisture is actually present to cause germination of the seed. Most seeds require more than eighteen per cent moisture present in the soil in order to germinate. Hydroscopic coating materials are not used as they will draw moisture from the seed itself and so have a detrimental effect. Pelleted seeds do not require more moisture for germination than bare seeds and should not be planted deeper than required for bare seed.

"Many seeds such as melon, cucumber, lettuce, sweet corn, and many grasses are fairly large and so elongated that it would be a disadvantage to coat them to the point where they were spherical in shape. Such seeds therefore are coated only to the point where there is sufficient coat for protection and uniformity of size and shape. All pelleted seeds are screened to 1/32nd of an inch difference between the largest and smallest pellet. Multiple germ seed clusters such as red beet and sugar beet are usually segmented before pelleting by breaking down these clusters and thus give single plants per pellet.

Ingredients

"In the pelleting process any type of ingredient in any accurate amount can be added in the coat, that will best control seed and soil born diseases, control soil insects, fertilize the seedling, stimulate the plant, and add minor elements that will give a healthy seedling and increase plant growth.

Fungicides

"In order to determine those fungicides or other ingredients that should be added to the pellet of a certain seed type, and the concentrations required to get optimum control of specific diseases, it is necessary to carry on an extensive research program of determination and a large scale greenhouse and field testing program. Optimum fungicides and amounts are accurately worked out and tested before a pellet is put on a commercial basis. Through extensive testing it has been determined that a much higher concentration of fungicide is usually required to control fungus diseases than can be made to stick on the bare seed through ordinary dusting methods. In a great many cases we find that a combination of two or more fungicides give much better results than any one type. Quick acting types such as the mercurials often give better results on the fast attacking fungi of pre-emergence damping-off while slower acting and longer lasting fungicides give better results on post-emergence damping-off and root rotting fungi. As an example of the high concentrations sometimes used, we use up to 100% of the seed weight of tetra-methyl-thiuram-disulphide on onions in order to get optimum control of smut in heavily infested areas. This is the best smut control method now known. Also in the pelleting process many of the fungicidal materials that are toxic to humans and are difficult to apply can be used with no danger whatsoever to the user and after application the materials cannot be rubbed off and thus reduce the concentration or effectiveness.

Insecticides

"Various insecticides such as DDT, Calomel, Bichloride of Mercury, Lead Arsenate, Paradichlorobenzene, etc., are added to the pellet coat in the very same manner as fungicides. Some of these materials are very effective on cabbage and onion maggot, wire worm, etc. Pelleting in itself reduces the take of rodents and birds. In surface planting of many seeds such as tree seed and grasses we are able to add rodent repellents to the outer surface of the pellet that

Phillips supplies NITROGEN in 4 forms

1 AMMONIUM SULFATE

Phillips *66* Ammonium Sulfate is available *now!* It's *dry*-cured to remove excess moisture—prevent caking. Uniform crystals flow freely—mix easily. Contains 21% nitrogen, ideal for all analyses of mixed goods and for direct application to all farm crops. Contact us now for your requirements.

2 ANHYDROUS AMMONIA

Tank car shipments of Anhydrous Ammonia (82% nitrogen) are assured to Phillips contract customers by Phillips huge production facilities in the Texas Panhandle. Write our nearest district office for full information.

3 NITROGEN SOLUTIONS

Get more N per dollar! Phillips *66* Nitrogen Solutions are well suited to the preparation of high-analysis fertilizers and the ammoniation of superphosphate. These three nitrogen solutions keep handling costs low! Promote rapid, thorough curing!

4 AMMONIUM NITRATE

Phillips *66* Prilled Ammonium Nitrate contains 33% nitrogen. The small, coated prills or pellets resist caking . . . handle easily. Depend on Phillips *66* Prilled Ammonium Nitrate for uniform, free-flowing properties and top-notch crop response.

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will greatly reduce rodent take. Crow repellents can also be used in this manner.

Fertilizers

"Although it is not possible to add enough fertilizing materials in the pellet to carry a crop through to harvest, it is possible to add fairly large amounts of phosphate and potash so as to produce a healthy and rapid growing seedling. In most cases it is not possible to add nitrogen in the form of fertilizer because of the toxic effects. We do, however, add such materials as dried blood in combination with other materials that readily break down to supply nitrogen. In all pellets the maximum amounts of fertilizing materials that are possible without toxic effects, are added.

Stimulants

"There are quite a number of stimulating materials and hormones that can be used in the pelleting technique that tend to hasten germination and emergence as well as stimulate the seedling. In many cases, hormones such as indol-butyric acid and others, or stimulants such as the iron extract of chlorophyll, inosital, vitamin B1, and such, stimulate the seedling and hasten emergence from the ground. Our research program also covers work on such materials as radio active materials, amino acids, terramycin, phenolbarbital, and many others that tend to stimulate plant growth.

Minor Elements

"Minor plant elements that are essential to plant growth and in many cases are deficient in soils are added in the pelleting process. Boron, manganese, cobalt, and the like are added in sufficient quantities to eliminate the usual chlorosis and deficiency effects.

Acidity

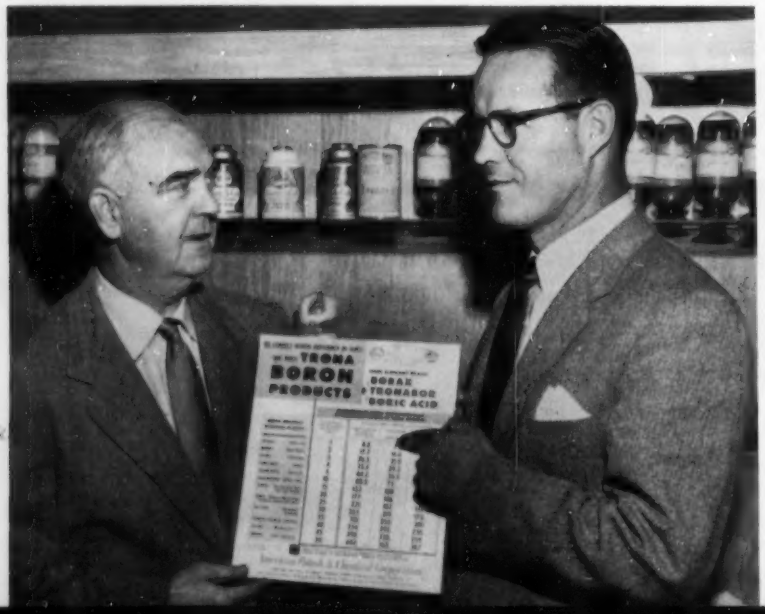
"The P.H. of the coating material is controlled so as to give the optimum acidity or alkalinity required for maximum germination of the seed and a healthy early seedling condition."

Obviously, pelleting has broad application because it can supply pesticides as well as some plant food. But it does more than that, as is indicated by this further quote from the Processed Seeds information:

What Pelleted Seeds Do

"Pelleted seeds make is possible to space plant more accurately and thus mechanize a crop so as to eliminate or greatly reduce the labor of blocking or thinning plants. Another contributing factor that aids thinner sowing is through the control of disease and seed rot under abnormal weather conditions that gives a maximum of plant emergence. Pelleting of seed types that are susceptible to damping-off diseases will increase emergence as much as 300%.

Here are W. J. Murphey, vice president in charge of sales of American Potash & Chemical and W. J. F. Francis, western sales manager, holding the new conversion table developed by AP&CC as an aid in treating boron deficient soils. The table is offered in the form of a counter card.



"The seed saved by better space planting more than pays for the cost of pelleting.

"Pelleting allows direct field seeding of such vegetables as tomatoes, cabbage, broccoli, cauliflower, egg plant, etc., that are usually transplanted to the field, thus saving a great deal in time, labor, and possibility of failure. Such seed can also be planted earlier in the field as the seedlings will stand much lower temperatures than transplants do. Other crops such as carrot, onion, lettuce, rutabaga, and the like can be spaced out better, thus cutting down the labor of weeding or thinning and giving more uniform sized vegetables. Field crop pellets such as sugar beets, chicory, beans, corn, cotton, etc., offer the same advantages and savings.

"Pelleted seed of many varieties of coniferous trees, range grasses, and cover crops are now being commercially produced so as to facilitate airplane planting of wild and uncultivated lands. The pellets have the advantage of weight for distribution, they will grow on the soil surface under normal moisture conditions, and can be protected from rodents and birds. Airplane distribution is essential in much planting in order to cover rough terrain and speed up the seeding of large acreage so as to take advantage of good moisture conditions. Such types of planting are essential in burned over areas and eroded ranges where there is no possibility of soil preparation.

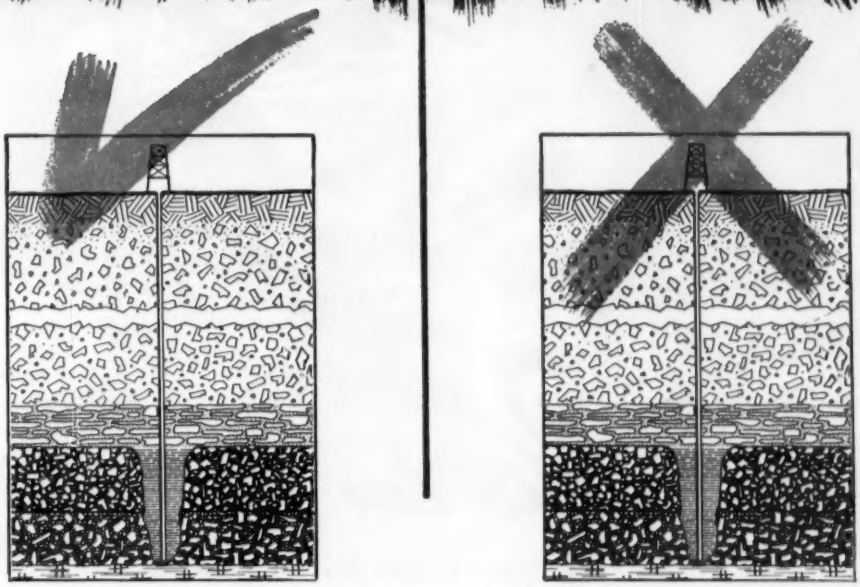
"Pelleted seed is very readily stored in the usual manner. It has been found that after pelleting the seed will keep more viable because of a more constant moisture condition and the control of rotting or mold during storage."

Pelleted Seeds

Phelps Vogelsang of the organization tells us of research in the field being carried on with cotton. Texas Tech at Lubbock; Coastal Plains Experiment Station; Paymaster Farms and others are doing field tests on cotton pelleting in connection with pre-emergence weed control with a coating that protects the seed from injury by the weed killer,

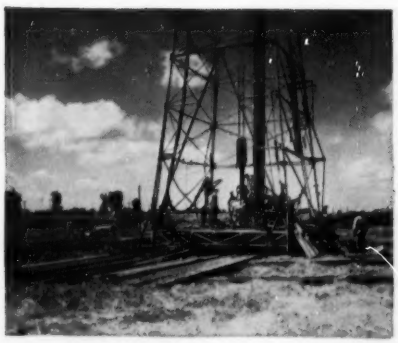
SULPHUR

...why can't *Every* dome produce sulphur?



The production of sulphur in the Gulf Coastal Region of Louisiana and Texas by the Frasch Process, is from underground natural beds found in "domes." However, very few domes have been found to contain sufficient sulphur, if any, to be brought into production.

It is estimated that nearly 200 dome structures along the Coast of the Gulf of Mexico have been investigated over the last half-century but only fourteen have produced sulphur in quantity.



And the presence of sulphur, even in quantity, doesn't always mean a successful producer. Some years ago a dome was found, explored, and proved with the result that a plant for the production of sulphur was erected at a cost of several million dollars. Later it had to be abandoned because the underground conditions did not lend themselves to the use of the Frasch Process.

A dome is a sulphur mine only when it can be worked economically and produce sulphur in commercial quantities.

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So flexible, that one St. Gobain unit can produce practically any desired nitrogen-phosphorous-potash formulae, *without altering the equipment.* Shown below are just seven of the possible formulae produced by the St. Gobain Process.

Examine the simplicity of the flow diagram and you will understand why the capital investment is so low. Continuous automatic operation of the St. Gobain Process with its unusually high yields mean low operating costs with considerable savings in power consumption, maintenance and labor requirements.

In addition to the great flexibility and the simplification of the equipment, St. Gobain offers the following advantages:

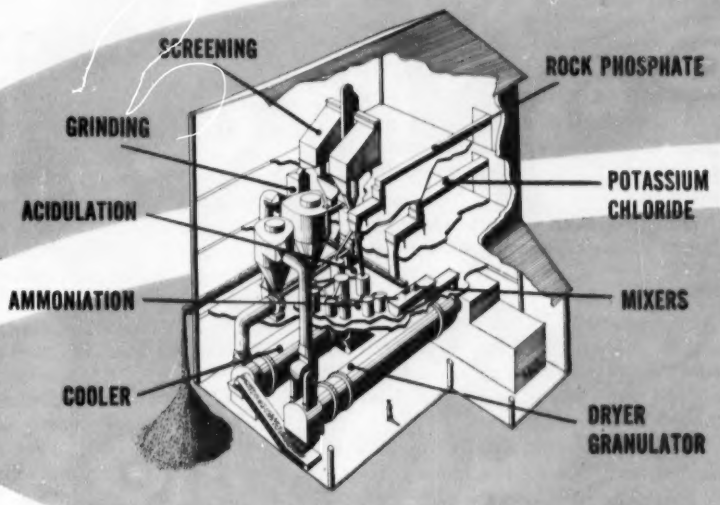
Phosphate rock grinding is unnecessary.

A very high nitrogen yield of 98:100.

Non-hygroscopity of the fertilizers due to the absence of lime nitrate.

Can produce end product in any sized granules desired.

St. Gobain process has been in successful industrial operation for 11 years.

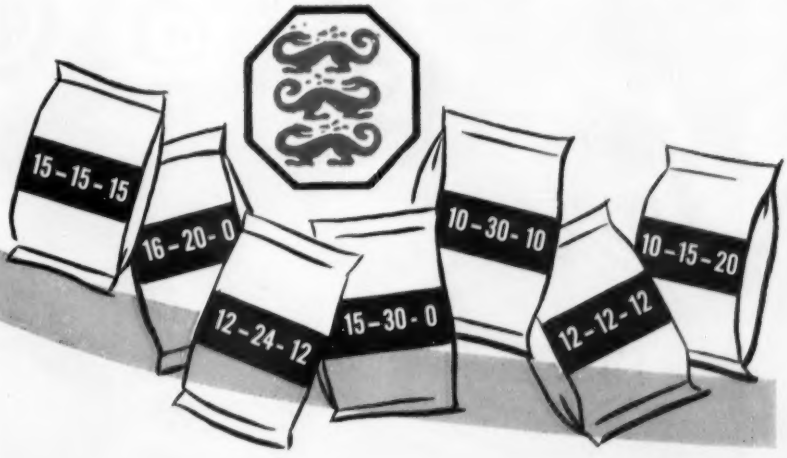


For complete information, write, wire or phone:

GENERAL INDUSTRIAL DEVELOPMENT CORP.

270 Park Ave., New York 17, N. Y.

AGENTS FOR ST. GOBAIN PROCESS.



and the use of organic systemic phosphates to stimulate the plant to increased production as well as the possible control of the first hatch of the boll-weevil. The results, he reports, have been most encouraging.

Another form of research about which he reports is the pelleting of fertilizer concentrates for aerial application to growing crops on wild land. They do not wind drift, so produce an accurate pattern—being uniform and of equal weight. By eliminating filler they increase the payload of the plane. And as there is no dust settlement they eliminate contact injury to growing plants. This type of pellet dissolves immediately on the soil surface and can be made to balanced formulae, including minor elements.

A new feature of this latter program is the use of organic phosphates to present fixation common in low pH soils.

Other research projects are mentioned in their literature, as follows:

Research

"Extensive and continuous research is being carried on at all times in order to keep pelleting techniques and inclusions of beneficial materials up to date.

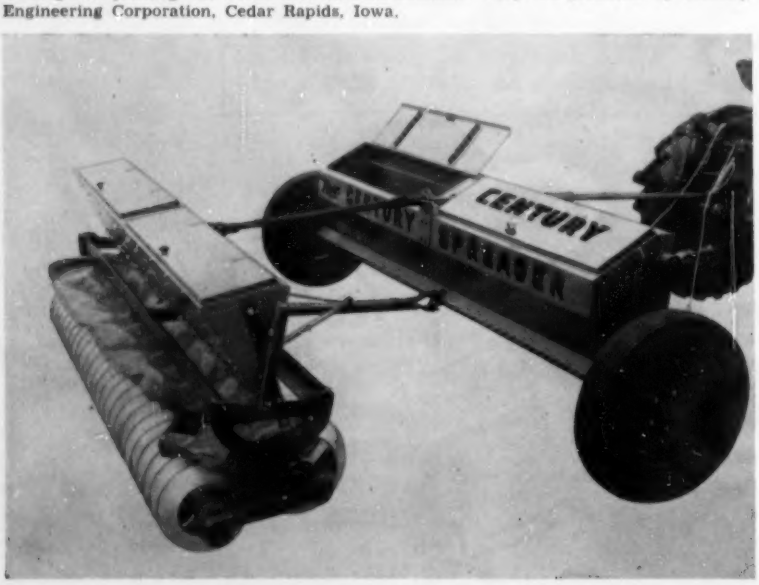
"Many new types of fungicides and stimulants are being developed yearly and many show promise of being adaptable to the pelleting process. The systemic organic phosphates show promise of being quite successful in controlling borers and leaf eating insects through root absorption from the pellet. They also show promise as a stimulant and can be used on non-food crops such as cotton, tree seeds, etc.

"Seed pelleting not only affords a large saving to the commercial grower, but also has the same or even more application in the small hand planted garden. Pelleted seeds can be readily spaced by hand so as to speed up the planting process. A great many flower seeds are benefited by pelleting both through the mechanical effect as well as disease control and stimulation.

"Interesting research is being carried on in the incorporation of activated carbon in the pellet that will protect the seed by absorbing the detrimental effects of weed killers such as 2,4-D when applied in the soil at seeding time so as to destroy weed seeds. Results of preliminary field tests are very encouraging and the process has possibilities of eliminating a great amount of hand labor when it is perfected.

"The pelleting technique also has distinct advantages when used on fertilizers for aerial application. A balanced formula containing concentrates of nitrogen, phosphoric acid, potash, minor elements, etc., is made into a pellet of even size and weight that prevents drift in sowing, increases the "pay load" of the plane and eliminates the hazard of contact injury on growing plants. Research is also being done whereby organic compounds are added to the fertilizer pellet that will prevent "soil fixation" of soluble phosphates under acid soil conditions. These pellets can be sown on growing crops or can be mixed with seed pellets so as to accomplish the seeding and fertilizing in one operation."

This new Century power take-off fertilizer spreader permits application of fertilizer, seeding and packing—all three with the one machine. They are produced by Century Engineering Corporation, Cedar Rapids, Iowa.



And finally the Processed Seeds data supplies this information about application equipment:

"There are several conventional type seed drills that, with minor variations, will do satisfactory space planting. Although most of these planters are not designed to do accurate planting or handle pelleted seed, several of the manufacturers of these machines are making minor changes that will make them more adaptable for pellet planting. Planters such as the John Deere #55 or #66 are made suitable for pellet planting by using inside hole seed plates rather than the perimeter notched type. The plate holes are bored 1/32nd of an inch larger than the pellet diameter. The conventional corn planter can also be converted for planting pellets by the same means.

"A typical planting set up may be described for direct seeding of pelleted tomato seed. Many growers prefer to drill individual pellets at one foot spacing in rows. After the plants are established they are thinned to singles. Both methods are economical and give a satisfactory stand.

"Small planters such as the Planet Jr. #300 will also do a fair job of distribution of the pellets. With the Planet Jr. a seed hole of 1½ times the diameter of the pellet is usually used.

"We have recently made a patent application covering a new type of magnetic planter for planting pellets. The planter wheel passes through the seed can and the pellets are picked up by magnetism. The planter wheel rotates in the direction of travel and at the same rate of speed so that the seed drop is made at zero momentum and thus gives a very accurate distribution of the pellets. The planter is made up as an attachment that can be used on any stand-

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WATER-SOLUBLE ($K_2SO_4 \cdot 2MgSO_4$)
DOUBLE SULFATE OF POTASH-MAGNESIA

CONTAINS SOLUBLE MAGNESIUM

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on

put it in the bag — put it on the bag

Dealers are looking for the analysis on the bag that shows the fertilizer contains *soluble magnesium, the fourth plant food element.* In many crop-growing areas from coast to coast, their farmer customers are getting finer quality, more profitable crops on magnesium-deficient soils when they use fertilizer containing soluble magnesium.

More and more fertilizer manufacturers are including *Sul-Po-Mag* in their quality grades in order to supply soluble magnesium in the most practical and economical form.

Sul-Po-Mag is a properly balanced combination of *sulfate* of *magnesium* and *sulfate* of *potash.* Both are water-soluble and immediately available to growing crops. *Sul-Po-Mag* is produced exclusively by *International* at Carlsbad, New Mexico, in bulk for mixed fertilizers and bagged for direct application.

By including *Sul-Po-Mag* in the bag, you supply the farmer with a better quality fertilizer, properly balanced with the basic nutrients required for healthy crop growth and profitable yields. It will pay you... in added prestige and performance of your fertilizer ...to include soluble magnesium—the fourth element in your quality grades. So...when you put it *in* the bag, put it *on* the bag, too: Nitrogen, Phosphate, Potash, *Magnesium.*

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Potash Division

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

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ard drill chasis. It is hoped that several of these planters will be available for use next season.

"The Milton precision planter which is manufactured by the Harbison-Paine Co., of Loveland, Colorado, is especially designed to do accurate pellet seeding. This machine is available for all commercial type row planting."

DUPONT SEED EXPERIMENTS

GEORGE H. SOULE

E. I. DuPont DeNemours & Company, Inc.

DuPont agronomists and technical men have, as our readers know, been testing seed treating with their Arasan and Ceresan for the past four seasons. Lately they have tested a blending of insecticide and fungicide, and have added this to the field experimental program. This information—showing the progressive results of four years work—has been compiled into "Report Number Four" —35 pages of data covering various crops in various sections of the US. The following sums up the findings very well, we believe, but readers who are anxious to study the step-by-step results will doubtless find DuPont very willing to supply the information direct:

"Evidence from farmers' own experience indicates that with good seed and good soil, chemical seed treatment is one of the best ways of insuring a good stand. Fungicide treatment to prevent seed rot, seed decay and seedling blight, or damping off, has been common with many crops for years; but many farmers still take a chance with untreated, or improperly treated, seed every year. This gamble is no money saver, because fungicide seed treatment costs only a few cents an acre, and pays off many times and small investment.

"Now an insecticide is being blended with a standard fungicide to give double-barreled insurance against insects in the soil, as well as fungous organisms. This combination has proved especially advantageous for preventing seed damage from wireworms, seed corn maggots and corn rootworms. Du Pont I and D Seed Protectant (based on "Arasan" seed disinfectant plus lindane) has been used commercially this year on peas, beans, corn, and sorghums.

"This report covers the fourth series of tests of on-farm testing, conducted by Du Pont technical men in cooperation with local authorities. Three reports issued previously covered a total of about 230 farm tests where grass and legume seed was treated with "Arasan" seed disinfectant. This new report covers another season of work with grasses and legumes, plus tests with the combination treatment on peas and vine crops, beans, corn, and sorghums. Also included are reports of 45 tests with "Ceresan" seed disinfectant on cotton, and 22 tests (two seasons) with "Arasan" on soybeans.

"For each crop that your readers are interested in, you'll find the names of farmers who participated in the tests, together with detailed results. Even with negative results which occurred on some farms, you'll see that the mass of evidence is overwhelmingly in favor of insuring a good stand by treating the seed. On a few crops, such as sorghums in Texas, the combination treatment is recommended only when soil insects seriously threaten the crop. But further studies on combination treatments are planned to establish more precise recommendations.

"Crop by crop, here's a nutshell summary of the 1953 Du Pont cooperative test program:

"Grasses and Legumes—This year's tests confirm previous indications that treatment with "Arasan" will give an average increase in stand of about one-third over untreated seed.

"Corn—Comparisons were made between one treatment with blended chemicals (I and D Seed Protectant) versus a drill-box application of lindane for seed treated by the supplier with "Arasan." Checks were treated with "Arasan" alone. Where wireworms were moderate or severe, the blend treatment gave better stands than the drill-box insecticide application, and substantially better than the fungicide alone.

"Soybeans—In 1952, thirteen tests showed an average stand increase of eight per cent resulting from seed treatment. In 1953, the average for nine tests was 17 per cent.

"Beans—Bean tests in 1952 included pea beans in Michigan, Great Northern dried beans in western Nebraska, pinto dried beans in eastern Colorado, and lima beans in California. Tests in 1953 were made in Michigan, western Nebraska, Idaho and California. In 1953, only the lima bean fields in California showed signs of serious infestation of soil insects. Here I & D Seed Protectant increased stands 30 per cent, 48 per cent, and 278 per cent in the three test fields, compared with the untreated, while fungicide treatment alone gave only a little over half the above increases. In other bean tests the double treatment proved to be safe insurance. Stands in the Michigan fields averaged 18 per cent better than the check, with 22 per cent fewer "bald-heads." Since soil-insect infestations are unpredictable in all bean-growing areas, the blended chemical treatment seems desirable as a general practice.

"Peas and Vine Crops—in California tests with cucumbers, watermelons and cantaloupes, the varying results indicate need for further testing. But apparently drill-box application of lindane on seed previously treated with "Arasan" seed disinfectant resulted in injury which did not occur when the seed was treated with a blended product. On watermelons, the blend treatment increased stands 36 per cent over the untreated and 20 per cent over the fungicide-treated checks. On the one farm in Pennsylvania where peas were damaged by maggots, the blend treatment gave a substantial increase in stand. On the other pea plots, there was no significant difference betwen the blend treatment and the fungicide treatment—indi-

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This marvelous productivity is kept at high levels through the addition of fertilizers. Many of these modern fertilizers contain potash produced by the United States Potash Company. Potash, a singularly effective ingredient, not only enriches the soil, but protects crops against disease, producing healthier crops and larger yields.

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cating again that the double treatment is safe insurance for peas.

"**Cotton**—The cotton tests are simply up-to-date experience confirming a well-known fact—that cotton stands can be substantially increased by proper fungicidal treatment of seed. In the 36 tests with fuzzy and machine-delinted seed, treatment with "Ceresan" seed disinfectant increased stands an average of 23 per cent; on acid-delinted seed, the increase in nine tests averaged 48 per cent."

MARKETS...

ORGANICS: Rather little activity in the Fertilizer Organic market is noted and Domestic producers of Nitrogenous Tankage are in a well-sold position at prices varying from $3.15 to $4.50 per Unit of Ammonia bulk FOB production points. Imported Nitrogenous Tankage is occasionally offered in limited quantity at prices around $4.25 to $4.50 per Unit of Ammonia CIF Atlantic Ports.

CASTOR POMACE: Northeastern producers continue to have supplies available at $25.00 per ton bagged FOB production points. This material tests minimum 6.75% Ammonia. Imported Castor Pomace varies in price depending on quality at around $32.00 to $34.00 per ton bagged CIF Atlantic ports. Domestic Castor Pomace originating in Texas and Oklahoma and testing about 6.25%/6.75% Ammonia, is quoted at various prices ranging from $14.50 per ton bulk to $15.00 per ton bagged FOB origin point.

DRIED BLOOD: This market has advanced rapidly and is currently about $8.50 per Unit of Ammonia for Unground Blood bagged, at New York and $8.75 FOB Chicago.

POTASH: Shipments of Domestic Muriate continues below normal dimensions but demand is expected to increase shortly. Prices are firm and unchanged. Movement of Sulphate of Potash is good particularly in the South. Imported Muriate is expected to arrive shortly at prices ranging from 54¢ per unit K_2O Ex-vessel Atlantic ports up to 57¢ Ex-vessel. Imported Sulphate of Potash is quoted around 90¢ per Unit Ex-vessel.

GROUND COTTON BUR ASH: This source of Potash, primarily in the form of Carbonate of Potash, continues available for prompt and future shipment at prices approximating the cost of Domestic Sulphate of Potash delivered destinations.

PHOSPHATE ROCK: Domestic movement has improved but is not quite normal for this period of the year. Stocks are adequate and prices steady.

SUPERPHOSPHATE: Shipments have gradually increased recently and stocks continue adequate. Prices are steady.

AMMONIUM NITRATE: This material continues in tight supply and in heavy demand. Prices are firm.

SULPHATE OF AMMONIA: Demand from Domestic sources have increased considerably in the last month but supplies are adequate and prices firm.

NITRATE OF SODA: Price continues unchanged and stocks adequate for the current and expected Spring demand.

CALCIUM AMMONIUM NITRATE: Several brands of this 20.5% Nitrogen Material continue available at several Atlantic and Gulf ports at $51.25 per ton bagged FOB cars at the ports.

GENERAL: Rather generally over the country demand from consumers of fertilizers is considerably behind schedule and all indications are that the Spring season will be short and fast, however fertilizer manufacturers have heavy inventories to meet the greater part of the demand.

THE SACKETT PLANT PACKAGE

FOR OVER 50 YEARS WE HAVE SERVED **ONLY** THE FERTILIZER INDUSTRY.

FOR 15 WE HAVE BUILT **COMPLETE** DRY MIXING AND SUPERPHOSPHATE PLANTS.

THIS IS WHAT WE MEAN BY COMPLETE.

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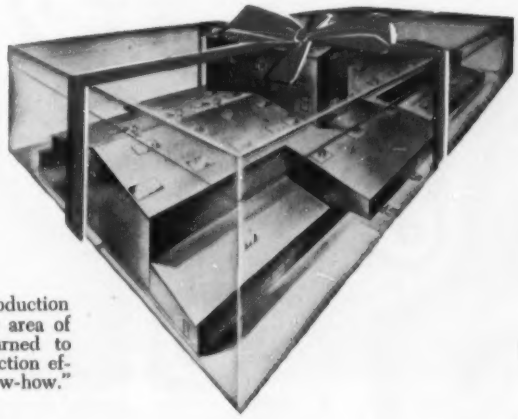
We assist you in the important matter of site selection for your new plant including determination of subsoil conditions.

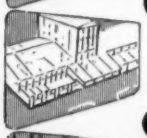
2 Plant Investment

We tell you before the contract is signed exactly how much the plant will cost. We protect you against unknown "cost plus" work.

3 Plant Design

We *custom-design* the building and all production equipment to meet the particular needs of your area of distribution. Further, we leave no stone unturned to incorporate the highest possible degree of production efficiency based on our wealth of specialized "know-how."





4 Building Construction

We construct the building from foundations to roof using the best materials obtainable in each component part. We include all electric power and lighting required including a power room, in which are located all motor controls for protection against usual dust and moisture conditions.

5 Equipment Manufacture

We fabricate in our own shops production equipment of the very latest design. Upon arrival at the site, we install this equipment with highly skilled men under the supervision of thoroughly competent field engineers. Upon completion of this work, each component part is thoroughly tested prior to the plant's initial operation.

6 Guaranteed Performance

We guarantee the operating performance of the complete project both from a standpoint of hourly capacities as well as manufacturing costs covering each operational phase involved. In most every case, these guarantees are exceeded by a safe margin. Should deficiencies develop, prompt corrective measures are taken at our expense.

7 Training of Personnel

After its initial startup, our Operations Engineer remains at your plant to thoroughly train your key production personnel.

Superphosphate and mixed goods producers are invited to get our seasoned counsel on their expansion and modernizatin programs. It is available at no cost.

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Savannah

A PIONEER FERTILIZER CITY . . .

Shown below are some of the fertilizer industry members who operate in the Savannah area. These "on the spot" photos were staff made. Top row: **1.** A. D. Strohbar, Southern Fertilizer and Chemical Co., just back from a trip to Florida, shows us the view from his office on Bay Street. Just across the river is the company's plant and in the background the new Eugene Talmadge Bridge, under construction, which will give trucks access to the plant. **2.** J. W. Rutland, Southern States Phosphate and Fertilizer Co., in the company's new sales office at 138 E. Bay Street (General offices and plant at ACL Wharf). The Rutlands, who rather recently moved to Savannah, are settled in their new home which suits them fine except there are no trees. Solution is easy, says Jack, who is transplanting them full grown—because he can't wait for them to grow up. **3.** Jim Baggs, snapped at Virginia-Carolina Chemical Corporation's office (and plant) on Lathrop Avenue. **4.** John L. "Jack" Cope, The Reliance Fertilizer Company, whose company offices have long been settled on "Fertilizer Row," Savannah's E. Bay Street, talked enthusiastically about the Camellia Show scheduled to be held in Savannah beginning January 23. Jack is a much-in-demand judge at the shows. **5.** Paul Reynolds and W. U. Bremer, Swift & Company's Plant Food Division, said this picture wouldn't be any good without the bull to make a third. Seems the noble animal has a history—and just recently acquired a coat of bright red paint. **6.** The Moore Company has closed up shop for the day but our camera caught E. W. Mathis, plant superintendent just as he was leaving. Not pictured are Charles Ellis, Mutual Fertilizer Company, who was away from the office, and B. C. Griffin, The American Agricultural Chemical Company and U. S. Aaron, The Davison Chemical Corporation, both of whom found every reason in the world not to be photographed (we haven't the slightest idea of giving up), as did Clint Smith of Blue Belt Fertilizer Company. Clint was a special problem. We tried to get him to let us get a snapshot of him in the park square in front of his office—it was beautiful setting, the sun shining through the trees and camellias in bloom, but you know what he said?—that nobody thought he did any work anyway and he wasn't going to let me get proof of it! (Staff Photos)

Savannah, a pioneer fertilizer city as our caption says, is one of the country's oldest ports and has rolled up considerable background as one of the industry's long established fertilizer centers.

Last month during a flying trip to Savannah, pop calls on all the fertilizer manufacturers in the area proved an interesting experience. As a group, they were cautiously optimistic about the season ahead, but predictions ranged from "as good as the previous year" to five to fifteen percent under.

Predictions were based on the severe cut in cotton acreage and drop in farm income. Estimates of

the offsetting factors varied from balancing the cut in cotton, to only partially offsetting the loss through increased use of fertilizer on less acreage and on other crops that would replace cotton.

However, all are preparing for a good season in spite of uncertainties. Business was very slow but showing signs of picking up the latter part of January. Also, orders were smaller which is natural since there is no scarcity of materials, and farmers know they can get delivery when they want it.

Only one manufacturer referred directly to profits, stated that they will be lower as manufacturers are caught in a price squeeze—higher material costs with declining prices on mixed goods.

But as more than one manufacturer said, he had been in the fertilizer business a long time and it was still going along, and going strong, in spite of some ups and downs.

Pictured above are the ruins of Chemical Packaging Corporation's original plant destroyed completely by fire last October. Origin of the fire was not determined but it started early in the afternoon. Fanned by a 40 mile an hour wind it quickly got out of control.

CHEMICAL PACKAGING PLANT ROLLING AGAIN

Exactly 89 days from the day fire completely destroyed Chemical Packaging Corporation's bag plant in Savannah, production was again under way. This nothing short of remarkable record was achieved by Carl Shirk, president of the concern, in getting the new plant built and equipped to run in less than three months' time.

January 22 was the date set for the plant's formal opening and that morning President Shirk was presented a rubber plant typifying the "bounce" he displayed in staging such a quick comeback.

Members of the industry were on hand for the opening and presentation was made by J. W. Rutland, vice-president, Southern States Phosphate and Fertilizer Co. Appropriately enough, Mr. Rutland, vice president of Smoky Mountains Fertilizer Co., Waynesville, N. C., purchased the first carload of bags produced at the four-year-old plant.

Pictured on this page are some of the fertilizer industry representatives who attended opening of the rebuilt multi-wall bag plant.

Below, left to right: Frank Dulany, Southern States Phosphate and Fertilizer Company, talks with John Watt, Armour & Company, Atlanta. (You can't see it in the picture but that dapper pocket handkerchief in John's pocket had his name embroidered in full on it).

2. U. F. Stewart, Southern Cotton Oil Co., C. B. Smith, Blue Belt Fertilizer Co., and Frank Rossiter, Savannah Morning News, who reported the opening.

3. Jack Rutland, Southern States Phosphate and Fertilizer Co., presents rubber plant to Carl Shirk, Chemical Packaging Corp., on behalf of the trade. Presentation was preceded by a brief speech, especially prepared for the occasion and delivered in Jack's inimitable style.—Staff Photos.

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Inspection of newly tubed bags just before bottoming operation. Careful inspections mean better bags for you.

Inspection of finished pasted bags. Because these pasted closures must stand great weight and shock, special care is taken to see that all surfaces are absolutely bonded.

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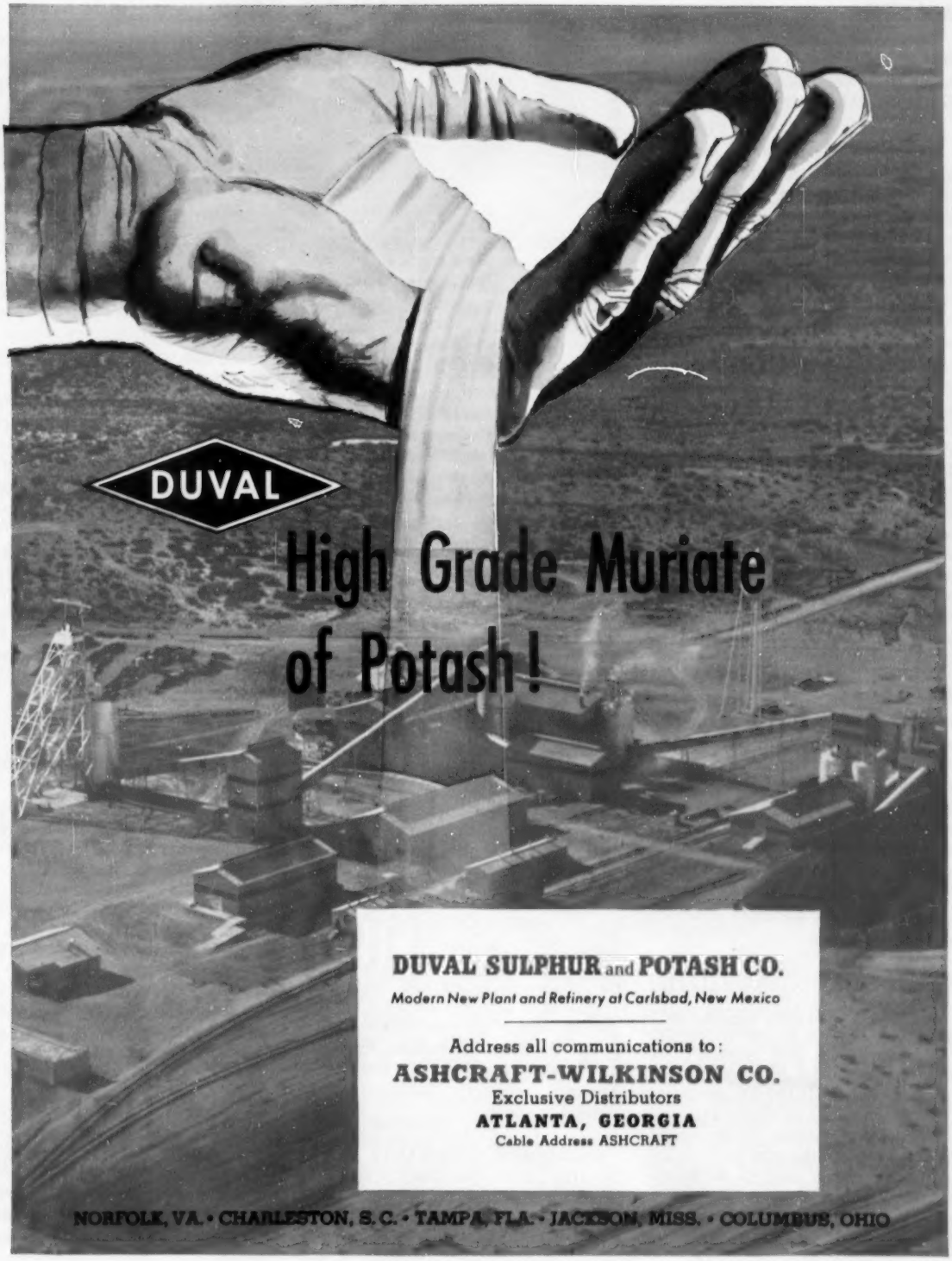
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ALABAMA

Chipman Chemical of Bound Brook, N. J. are to put a pesticide plant near Bessemer on a tract already bought.

* * *

Tennessee Corporation, has acquired the plant and properties of the **Sand Mountain Fertilizer Co.,** Attalla, a small dry-mixing operation. It will be run in conjunction with their East Point, Georgia plant from which superphosphate will be delivered to Attalla.

* * *

Muscle Shoals Chlorine Plant, US owned, should be sold outright to private industry, is the contention of a statement submitted to the US Defense Department and the Military Affairs Committees of Congress by **Diamond Alkali.** The reason: the lease deal proposed gives the Government option on but no responsibility for half the chlorine for the adjacent phosphate works. This might well leave the lessee in a spot, after annual chlorine contracts were all let. And normal chlorine sources can well take care of the adjacent facility, they contend.

ARKANSAS

Tri-State Chemical Company, Miami, Oklahoma, is putting up a 125 by 250 foot building in Springdale which will employ between 40 and 60 when it is complete in another month. Tri-State's own personnel are supervising construction.

* * *

Delta Fertilizer Co., Helena, is completing plans for three new bulk storage buildings.

CALIFORNIA

Shell Chemical has formed a new ammonia division to handle production distribution and sales for the new Ventura plant reported on here last month—a $10,000,000 operation which turned out its first anhydrous ammonia the middle of December. Headquarters of the new division are in San Francisco, with **G. R. Monkhouse,** vice-president, in charge. **L. M. Roberts,** manufacturing general manager will assume charge of manufacture, distribution and marketing engineering for both Shell ammonia plants on the coast, the other being at Pittsburg. **V. C. Irvine** is sales manager for the new division. Monkhouse and Irvine will continue as manager and sales manager of the Shell Western division which handles all other Shell Chemical products.

* * *

California Spray-Chemical, Richmond, has for showing a full color, sound movie dramatizing how the grove owner and the scientist help each other to produce disease-free fruit. The title: "Keep America Growing . . . Quality Fruit."

* * *

C. H. Haas Co., fertilizer mixers and wholesalers of simple fertilizers, have moved their offices from San Francisco to Modesto. Their new address P. O. Box 826. Their phone, Modesto 7-0701.

* * *

Agriform Co., Arvin, have erected a 420,000 gallon liquid nitrogen tank, which is the largest in California, according to **D. W. Galbraith,** division manager.

FLORIDA

International Minerals & Chemical on January 14 lost by fire the world's biggest dragline—the "Super Scooper," a $30,000 loss.

GEORGIA

Cairo Fertilizer Co., Cairo, has been bought by a group of farmers who formed a new corporation, **Graco Fertilizer Co.** and plan to expand and modernize it. The plant was established by the late **Fred Carroll,** whose estate had continued operation in the year since his death. The officers of the new concern are: **Cyrus T. Helm,** president; **Howard T. LeGette,** vice-president; **Robert E. Johnson,** secretary treasurer and general manager.

* * *

Southeastern Chemical Corp., Douglas, will produce pesticides when it gets into operation. The concern is owned by **Dr. G. W. Shirley** and **J. C. Thomas.**

IDAHO

Simplot Soilbuilders of Lewiston, is the tenth liquid nitrogen operation established by **J. R. Simplot Co.,** Boise, in the Idaho, Colorado, Washington and Oregon region. **J. W. Lofquist** has been made general manager of the Lewiston operation, which will include, in addition to the aqua-ammonia facilities a plant for blending tailor-made fertilizers for the area. Lofquist, formerly Simplot liquid fertilizer sales division manager at Boise, and for the past three months with **McCall Farm Chemicals** to design and construct plants at Walla Walla and Craigmont, has had long experience in this field.

ILLINOIS

Schrock Fertilizer Service has increased its storage space at Congerville, providing room for 1500 more tons of ingredients. They have applied for a patent on their equipment which enables the spread of rock phosphate without having it blow away. They put their de-dusted phosphate on the market last Fall and have experienced a rising demand for it.

* * *

Rauh and Sons Fertilizer, Indianapolis, have indefinitely tabled their plans to build in Tuscola a $2,000,000 fertilizer plant.

* * *

International Minerals & Chemical (see Personals) have established two new phosphate divisions, divided into phosphate chemicals, headed by **Howard F. Roderick,** and a phosphate minerals division, headed by **George W. Moyers.** The former will supervise the continued growth of sales of their new plant near Bartow and those at Wales, Tennessee, and Tupelo, Mississippi. The latter will be responsible for mining and refining of phosphate ores in Florida and Tennessee.

According to **Louis Ware,** president, the new divisions are typical of the vertical integration program being conducted by the company, and in line with the planned growth and diversification program they have followed for a number of years.

INDIANA

Production of a new and improved type of fertilizer, utilizing the most modern handling and processing facilities, has been started at the new plant of **The Davison Chemical Corporation** at New Albany, it was announced January 5 by **J. L. Gayle**, local plant manager.

In addition to processing and storage equipment, the plant has a modern office building, and extensive welfare and shop facilities. Cost of the plant was approximately $1,000,000 and it will employ from sixty to eighty men, according to season, the annual payroll being more than $200,000.

Davison built the plant to replace fertilizer manufacturing facilities at 10th and River Streets, because the new Ohio River flood wall left the plant between the wall and the river.

Also, expanded and improved facilities were desired so that Davison could manufacture granulated homogenous fertilizer, a product which is made by an exclusive Davison process. It is in the form of small granules and has the advantage of being dust-free, resisting caking in storage, flowing freely through distributing machinery, and having important nutrient advantages when applied to the soil. Mr. Gayle said.

"The plant will be equipped in every way to give the best kind of service. Truck-loading facilities are protected from the weather. The plant is all on one level and flexible mobile equipment of the latest design will contribute to the efficiency of all operations. Conveying and handling equipment will enable unloading of raw materials, manufacturing, and shipping to go on simultaneously without interference."

In addition to Mr. Gayle, the staff of the new plant includes **Major W. Hancock**, superintendent, **W. H. Martin**, sales supervisor and **Miss Garnett Anshutz**, office manager.

* * *

American Brand Fertilizer Company, Hobart and **Benson-MacLean**, Bridgeton, are jointly producing and distributing "Grow Power Planter Mix" which, as their word to us states, is "energized with Activo, a bacteria-biotic-enzyme composition" manufactured by Benson-MacLean.

John Greenberg, of American says "It's not a fertilizer, yet it's much more than a potting soil." In fact, he says, "we believe it is better than the average fertilizer because it conditions soil while enriching and energizing it."

KENTUCKY

Tri-State Chemical Co., Henderson, has been granted the first loan to any chemical company, $80,000, by the new Small Business Administration, as an aid to building their $130,000 plant, producing fertilizer for a fifty-mile radius from Henderson. **Davidson-Kennedy**, Atlanta, has been awarded the engineering contract, and **A. T. Kennedy** of that concern reports that the processes being installed are the most modern and fully automatic as possible. All equipment, as well as plant design, engineering and supervision are being furnished by D-K. **John W. Manning**, who heads the new concern resigned as administrative assistant to Senator Earle C. Clements of Kentucky to take the post. Previously Mr. Manning had been Commission of Finance for Kentucky and later served as State Director of the OPS before going to Washington in 1952.

LOUISIANA

Commercial Solvents are building at Sterlington large scale facilities for the production of nitro-parrafins, a new family of petrochemicals, "never before available to the industry in volume," according to J. Albert Woods, president. They are versatile in their utility as raw materials for producing other chemicals, including those for agriculture. To cost $5,000,000, full production of the plant is planned for the last quarter of next year.

* * *

Bunkie Phosphate Company, Inc. has been chartered at Bunkie, with capital stock of $25,000.

MARYLAND

W. B. Tilghman, Salisbury, have already begun to rebuild the plant at Pocomoke City, destroyed by fire as was reported here last month. It will contain the most modern production facilities available, and be in production by mid-Spring.

* * *

Davison Chemical now handle sales of triple superphospate through their Heavy Chemicals department, with also handles sulphuric acid, superphosphates and phosphate rock. **William Caspari, Jr.** is general sales manager of the department.

MISSISSIPPI

Mississippi Chemical has donated $50,000 of its stock to **Mississippi State College** as a perpetual income base for agricultural research, with special emphasis on fertilizers. This is bread upon the waters, for when the great plant at Yazoo City was only a dream the State of Mississippi granted $50,000 for education and promotion of the idea. There were no strings to the grant, but the MCC

board unanimously wished to establish the State College fund.

* * *

Southern Nitrogen Supply Co. Inc. has been chartered to produce fertilizers at Yazoo City, with capital stock of $50,000.

MISSOURI

National Container Corporation has acquired the physical assets of **Allied Paper Bag,** Kansas City. This "fully equipped modern plant manufacturing multi-wall bags" gives National a strategic plant from which to serve the Southwest, according to National's president, **Samuel Kipnis.** A third building will be added to the present structures, and connecting them, is to be erected, increasing overall space to more than 70,000 square feet.

NEBRASKA

The Nebraska Agricultural Chemical Company is planning to build a granular fertilizer operation at Lincoln some time this year, according to **Harold Safrin,** spokesman for the concern. The plant will cost about $75,000, and employ 25 during the season, he estimates.

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Union Fertilizer Company, Oakland, has been incorporated for $20,000. Incorporators: **Arlington Svoboda, Kermit Wagner and Harry B. Chronister, Jr.**

NEW YORK

Barker Chemical Co., Sodus, lost a third of their 100 by 40 foot pesticide plant to fire recently—a wing used to store ingredients. **Muron Williams,** plant manager, estimated the damage at $15,000.

* * *

Consolidated Chemical Industries has moved its New York office to 380 Madison Avenue. New phone is OXford 7-1340.

OHIO

Nitrogen Division has awarded contract to **Luria Engineering** for a 14,400 square foot, standardized steel warehouse at their South Point plant. Construction should be complete by the end of this month.

DAVISON OFFERS 12-12-12 GRANULATED FERTILIZER

Introduction of DAVCO 12-12-12 granulated fertilizer is announced by The Davison Chemical Corporation, as an addition to the comprehensive line of analyses supplied through the company's mixed fertilizer plants.

State experiment stations, the announcement pointed out, are increasingly recommending fertilizers in 1-1-1 ratio for corn and other important crops. The new product has the economic advantages of a high analyses—a more concentrated fertilizer than, for example, the 8-8-8—and in addition to 12 per cent each of nitrogen, phosphoric acid and potash, has calcium, sulphur, and many trace elements. There is no make-weight, inert filler material.

The new product is also in granular form. Thus it resists picking up moisture, will not corrode machinery or cake in storage. It flows freely, is non-dusting and is homogeneous—that is, each granule contains the plant nutrients in the same proportion, so that there can be no segregation of the ingredients. Graduated size of granules means a gradual release of nutrients, less leaching and less friction of phosphate and potash.

Phosphate used in Davco 12-12-12 is high in water-soluble monocalcium phosphate content and low in citrate-soluble dicalcium phosphate, an advantage in getting crops off to an early start and achieving earlier maturity.

Davison agronomists point out that although the 1-1-1 ratio is now the subject of frequent recommendation, it is by no means best for all crops and conditions, and they urge users to follow recommendations of their state experiment stations. Davison maintains in each of its distributing areas a full line of recommended analyses.

OKLAHOMA

Nichols Seed Company, Jones, has acquired the pesticide producing equipment of **Agricultural Chemicals,** Oklahoma City.

* * *

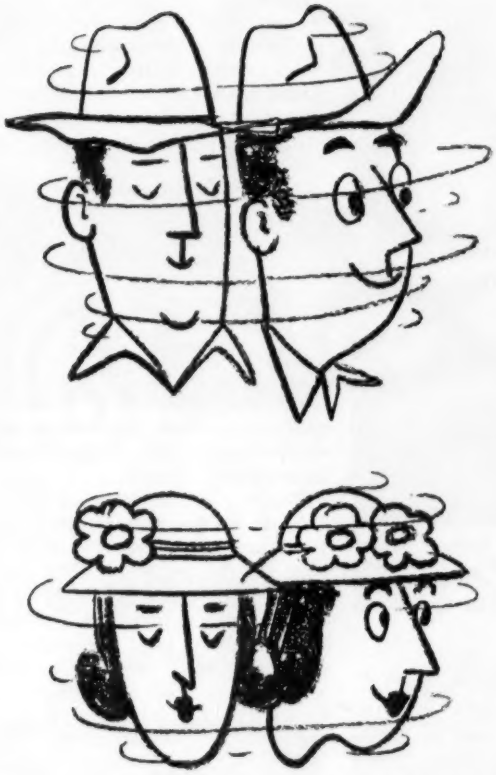
Phillips Petroleum Company has practically doubled its production of anhydrous ammonia with the start-up of a new 450-ton per day plant recently completed by **Phillips Chemical Company,** a wholly owned subsidiary, at Adams Terminal on the Houston Ship Channel, according to an announcement by **K. S. Adams,** chairman, and **Paul Endacott,** president of Phillips.

Phillips officials also announced that the new 405-ton per day triple superphosphate fertilizer plant was being put in operation at Adams Terminal, and the completion of additions at the company's plant at Dumas in the Texas Panhandle more than doubled the production of nitric acid used in the manufacture of ammonium nitrate in its plants there. Completion of the new triple superphosphate plant added another essential element of plant food to Phillips fertilizer products.

The announcement said these new plants were located at Adams Terminal because of the availability of natural gas for the ammonia plant, which will take 26 million cubic feet per day from Phillips reserves in the nearby Chocolate Bayou Field.

OREGON

Marine By-Products Co.'s plant at Portland has been bought by **Wilbur Ellis Co.** and has become a division of W-E. **Peter Harris** is retiring, and **Ed Asbill** will be manager.



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You give your brand of fertilizer extra sales appeal when you use Fulton's attractive, high quality cotton bags — *which are designed for your customer's re-use.*

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NEW YORK CITY, 347 Madison Ave. • WINTER HAVEN, FLA. • SAN FRANCISCO • PHOENIX • SAVANNAH

The Natural Plant Food Co., Oklahoma City, producer of dehydrated manure, bought this Schield Bantam crane with clamshell attachment in July of 1952. Their officials estimate savings of more than 25% in time and labor over previous rehandling methods, and can now unload and stockpile a daily average of 2 to 3 cars. Schield Bantam Company are located at Waverly, Iowa.

SOUTH CAROLINA

Mitchell Insecticide Co., Fairfax has been incorporated for $5,000, with **Billy G. Mitchell** as president, to produce pesticides.

TENNESSEE

Mid-South Chemical, Memphis, has bought the business and bulk ammonia storage equipment in Covington, Brighton, Tipton, Hopkinsville, Morganfield, Auburn and Henderson, from **Covington Fertilizer Co.**, and has formed a new company, **Farm Chemicals, Inc.** to handle these points. **Dan Wooten**, manager of Covington Fertilizer has an interest in the new company and will be its general manager. Facilities will be added at Murray and Guthrie, Ky. bringing total capacity to 200,000 gallons.

TEXAS

Mathieson Chemical Corporation has completed an expansion program costing approximately $1,500,000 at its Pasadena plants, **John R. Beatty**, Houston operations manager for Mathieson, reports.

Commercial production began last winter in a new $1,100,000 unit for the manufacture of high analysis, pelletized chemical fertilizer. Operation of the new unit is expected to increase production at Mathieson's Pasadena operations by 25 per cent.

Modifications of the existing sulphuric acid plant and fertilizer plant at Pasadena, costing slightly more than $400,000, have also been completed in recent weeks.

This expansion, Mr. Beatty said, provides the Houston area with the largest chemical fertilizer plant in the Southwest and one of the largest in the nation.

Mathieson manufactures numerous grades of chemical fertilizer at its Pasadena plant which was one of the first in the world to manufacture high analysis, pelletized fertilizers.

The present expansion program continues a policy of development at Houston which began with Mathieson's acquisition of the Pasadena sulphuric acid and fertilizer plants in 1949. The operations consume large quantities of sulphur mined in the Houston area.

While the new fertilizer unit will make the same products as made in previously existing facilities, Mr. Beatty said certain process improvements have been included in the new unit. Construction of the unit began in January, 1953.

* * *

Texas Gulf Sulphur has bought 30 producing oil wells near its Beaumont sulphur mines, and is looking around for more.

* * *

Phillips Chemical won a case last fall against the State of Texas, which had been collecting taxes on the sulphur produced by Phillips from natural gas. The Phillips contention that the tax was illegal was upheld by the lower courts. The State is appealing.

* * *

W. R. Booker & Associates, as has been previously reported here, are studying the Southwest for a site for what is said to be a $3,500,000 fertilizer chemical plant. At last report, **R. C. McIlwee**, head of the proposed firm, has been meeting in Dallas with officials of the Chamber of Commerce of Daingerfield, to discuss permanent financing. This is taken locally to indicate that the choice has been made.

* * *

Southwest Fertilizer Company, Dallas, has been organized with $2,100 paid in capital by **J. Grady Brown, Jr.**, **T. S. Lynch** and **Walter H. Gilbreath.**

* * *

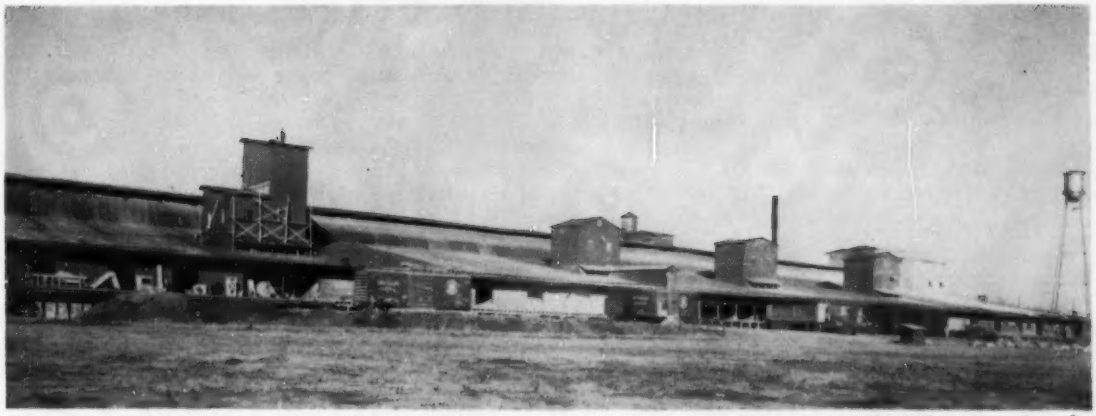
Sod-Gro Fertilizer Company, Monahans, has been assigned "Sod-Gro" as a trade mark by the Secretary of State.

UTAH

Western Phosphates, the $5,000,000 phosphatic fertilizer plant built by **Stauffer** and **Garfield**, and which has initial output capacity of 92,000 annual tons, went into production January 4. **John Paul Jones** is vice-president and general manager. The plant was built for quick future expansion.

WASHINGTON

Simplot Soil Builders have begun construction of the new plant at



For over 65 years Georgia Fertilizer Company at Valdosta, Ga., has supplied fertilizers to farmers of South Georgia and North Florida. With a capacity of 75,000 tons of mixed fertilizers as well as superphosphate and sulphuric acid plants, the Georgia Ace brand is a major factor in its trade area. Ray L. King is president and general manager.

Georgia Fertilizer Company
. . . Another Spensol User

Millions of dollars worth of highly specialized equipment is needed to produce SPENSOL (Spencer Nitrogen Solutions).

Dependable service has made SPENSOL a favorite with mixers. Tank cars like this are a common sight on their tracks.

This spray pipe with deflecting nozzles was invented by H. B. Davis of Spencer. Can our Technical staff help you?

SPENCER

SPENCER CHEMICAL COMPANY, Dwight Bldg., Kansas City 5, Mo. District Sales Offices: Atlanta, Ga.; Chicago, Ill.; Memphis, Tenn.; Works: Pittsburg, Kans.; Henderson, Ky.; Chicago, Ill.; Vicksburg, Miss.; Orange, Texas (under construction)

America's Growing Name in Chemicals

Walla Walla, which should be in operation within 60 days.

* * *

Carstens Packing, Tacoma, have in operation the new $175,000 plant there which produces 20,000 annual tons, with virtually all-push-button operation. It requires only six men.

* * *

Shell Chemical are installing 50,000 tons of ammonia storage capacity in the Northwest, and will ship by barge from their new plant at Pittsburg, California, to Portland Oregon and Pasco, according to **George R. Monkhouse,** who heads up their new ammonia division. (See Personals)

BRAZIL

The State of **Minas Gerais** is organizing a group for development of the apatite reserves and large-scale fertilizer manufacture. Cr$150,000,000 is to be invested as a beginning.

EIRE

The Government is planning to finance a nitrate of ammonia plant which will cover 30 acres, in an effort to balance the $26,000,000 flight of dollars which has gone annually into the import of fertilizers. Peat from the Irish bogs would be the basic raw material.

ECUADOR

Industria Interamericana de Instanticidas, using the pyrethrum, whose cultivation has expanded sharply in the Quito region, has begun production of sprays for home and agricultural use under the brand name "Pix." **Dr. Luis Werner Levy** is general manager. **U.S. Industrial Chemicals,** New York, is supplying technical assistance.

FRANCE

Compagnie de Raffinage Shell-Berre, Berre-L'Etang, is producing sulphur from natural gas at a rate of 5000 annual tons.

ICELAND

Fertilizer Plant, Inc., when it begins full production of its ammonia, nitrogen and nitric acid capacity has tentatively scheduled half its ammonium nitrate for export. This will begin to shift the trade balance of a country which has been wholly an importer up to this time.

INDIA

The urea-ammonium plant planned for Sindri, to produce 90 daily tons of ammonia nitrate using coke-oven gases as raw material, and designed to expand later to use up to the 10 million cubic feet of gas available at the site, has reached the bid stage. Two American, two German and one Italian concern have been asked to submit their figures.

* * *

Pakistan will this month—February 20—lay the cornerstone of a fertilizer plant being built at Karachi with aid from America and Canada. It is expected to be in production by early 1956.

INDONESIA

The Government is planning a $2,000,000 plant, to turn out more than 150,000 annual tons of fertilizer, to be located in southern Sumatra. Completion is expected in two years, with German chemists and engineers supplying technical aid. Japan and the US are present sources of nearly all of the fertilizer used in Indonesia.

IRAQ

Texas Gulf Sulphur and the **Iraq Government** are working out an agreement for a 50-year program under which the two will develop Iraq's sulphur resources on a 50/50 basis.

MEXICO

Mexican Sulphur Co., American-owned, has begun production in their $6,000,000 sulphur plant, which is expected to supply more than enough to satisfy Mexico's present needs. Located in San Cristobal, the plant is calculated to turn out more than 200,000 annual tons.

NORWAY

Norsk Hydro, Norway's largest electro-chemical concern and leading exporter of nitrogen products in Europe, is currently expanding its production capacity in several fields. By the end of 1954, the output at the Glomfjord, Rjukan and Notodden plants will have been increased by 34,000 tons of pure nitrogen a year, corresponding to 220,000 tons of nitrate of lime. The total ammonia production will then reach a volume of 230,000 tons of pure nitrogen a year. In the entire year of 1928-29, Norsk Hydro produced only 33,000 tons of nitrogen.

TURKEY

Extensive developments in the fertilizer field are taking place: At **Murgul** a $1,200,000 sulphuric acid plant, to turn out 100,000 annual tons is to be built, contracts already having been awarded to the French company—**Societe Commercial Technique et Industrielle.**

At **Adana** a superphosphate plant is already functioning, and a nitrogen plant is soon coming in at **Kutahya.**

Jeffrey Bulletin Re Power Scoop

Jeffrey Bulletin No. 863 describes a new Automatic Power Scoop designed for one-man operation in unloading bulk material from box cars. The scoop is produced by The Jeffrey Mfg. Co., Columbus 16, Ohio. The bulletin lists several outstanding features of the scoop, including a "dead-man" switch lever located on the handle grip and a free-wheeling clutch giving the operator full control. Greater safety and speed with less fatigue to the operator are claimed by the manufacturer.

Explosion-proof and remote control equipment can be furnished for use in handling hazardous material, and individually designed scoops for special jobs are available. Information is now available through the company's district offices and distributors in principal cities.

MONTANSALPETER

AMMONIUM SULPHATE NITRATE

26% NITROGEN

supplies the 2 key forms of nitrogen

Contains 6½% nitrate nitrogen — quick acting for early, vigorous growth. Contains 19½% ammonia nitrogen — slower acting for sustained growth through to harvest time.

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Pelletized and properly sized for flow. Easy to handle, ready to use for top dressing, side dressing and irrigation.

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Personals . . .

Marlin G. Geiger, new president of **The Davison Chemical Corporation,** in a year-end statement said: "It is our belief at Davison that there will be no significant overall change in the business picture; that in some lines further increases in activity can be expected while in others readjustment will take place as supply temporarily overtakes demand.

"It is a mistake to assume that new chemical plants which have recently come into operation or are scheduled to do so in the nearby months simply add to the total of available products for sale. Many of these new facilities are devoted to new and improved products, or to the more efficient output of already established products, and hence will be needed and used even though the market as a whole does not advance.

"In the instance of fertilizers, there was a falling off in volume last year largely ascribable to the drought, a temporary influence. This was partly responsible for an increase in the industry's inventories. With larger supplies available to them, also, farmers and dealers reduced their early take of fertilizers. But with the approach of spring planting there are already indications of satisfactory seasonal business, and inventory reduction will certainly be in evidence as the season progresses. Here again new products, including high analysis fertilizers and granulated forms of fertilizer, are influencing the market and justifying the expenditures made in plant improvement.

"From every viewpoint, 1954 will reward good business practice—which includes not only diversification but better products, more efficient production, and sound aggressive salesmanship.

* * *

"Amazing and dynamic industrial progress" is the long-term forecast for the United States by **Crawford H. Greenewalt,** president of the **Du Pont Company.**

He characterized as "nonsense" the viewpoint that the economy is reaching an industrial plateau from which progress will be made only as population increases. "It is tantamount to saying that the last scientific barrier has been crossed—that there is no fruitful objective for further research—and that man's appetite for a more abundant life has been fulfilled."

"The progress of genius and inventiveness is something that is always underrated," he declared, pointing out that ours is an economy of abundance which is shaped "by human courage, desires, and incentive" and not by inventories, government spending, or "the host of business indicators."

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The use of agricultural ammonia as a nitrogen fertilizer for farm crops will spread to many new areas this year, predicts **E. W. Thomas** of Boonville, Missouri newly elected president of the **Agricultural Ammonia Institute.**

Despite a Government-announced forecast of a 20 percent greater overall supply of agricultural ammonia, which contains 82% pure nitrogen, Mr. Thomas believes the demand from these new areas, plus increased demand from farmers, will again create a shortage of ammonia during the April, May and June period of heavy application.

Mr. Thomas, who is 53, heads the Farm Service Corporation, an agricultural ammonia distributing firm operating in Central Missouri and became head of the Agricultural Ammonia Institute on January 1st, succeeding Jeff I. Davis of Albany, Georgia.

An active farmer himself since 1924, Mr. Thomas is also president of the Great Plains Agricultural Ammonia Association, a midwest regional group. He was born in St. Louis, and graduated from the University of Illinois College of Agriculture in 1924. He was elected president of the Agricultural Ammonia Institute at its annual meeting in St. Louis in mid-November. More than 700 leaders in one of the nation's fastest growing fertilizer industries attended.

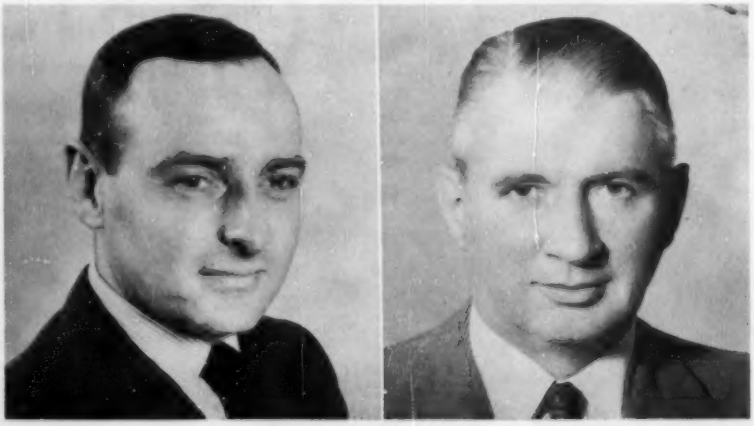
* * *

O. C. Minton, after 20 years association with **Naco Fertilizer,** has resigned as vice-president and general manager of their Florida division. During his regime the division has became so far flung and its operations so varied that, according to Mr. Minton "I feel this step necessary so I will have sufficient time to devote to my groves, ranch and other business interests."

To succeed Mr. Minton, **William R. Thurston,** Naco president with headquarters in Joplin, Missouri, has announced the appointment of **W. C. "Chan" Smith.**

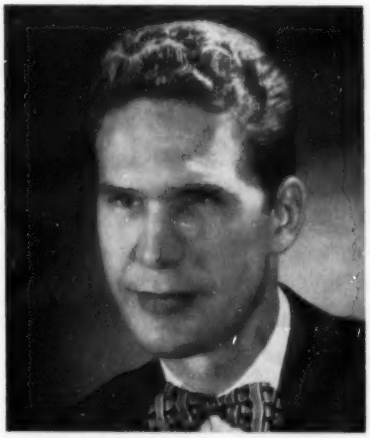
As manager of Naco's Florida operation, Smith will be responsible for sales, production and distribution at Naco's Fort Pierce and Jack-

G. R. Monkhouse, right, Shell Chemical vice president, who has been named to head the new Ventura ammonia plant. Left is L. M. Roberts, general manager of manufacturing for the company, who will move to San Francisco from New York to be operations manager of the new division.



Dallas Cantwell, agronomist for Spencer Chemical, has become assistant manager of the agronomy section, a new post. He will assist P. W. Gull, manager of the section. Mr. Cantwell joined Spencer in 1950 after 2 years as a county agent.

Robert H. Hessel, who has been appointed chief research engineer of Davidson-Kennedy Company, Atlanta. He will serve as consultant to the design, engineering and sales departments. Having had many years experience in design, engineering, manufacture and operation of fertilizer equipment, granulation and ammoniation, he will increase D-K's capacity to render a complete service from design of plant to personnel training.



sonville plants. He will maintain offices in Fort Pierce. Centralized control, however, will be maintained from the central offices of Naco Fertilizer Company in Joplin.

Smith was employed by **Armour Fertilizer Works** for 18 years, working alternately in the manufacturing, advertising, purchasing and sales departments until 1942, when he enlisted in the Air Force.

Upon discharge, Smith returned to Armour Fertilizer Works in their Houston, Texas sales office. In May, 1946, he was transferred to their Dallas Texas office as district sales manager for Oklahoma and parts of Texas and Arkansas, directing the sales efforts of ten salesmen. Since leaving Armour in June, 1953 he has been attached to the combined general offices of Naco Fertilizer Company and Thurston Chemical Company in Joplin.

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John W. Manning has resigned as administrative assistant to Earle C. Clements, to become president of **Tri-State Chemical Company,** Henderson, Kentucky, a new plant under construction, which will produce 20,000 annual tons of fertilizer.

* * *

Marietta Concrete's vice-president **C. B. Ross** recently completed his term of office as president of the National Association of Silo Manufacturers, and another Marietta v-p, **F. Leonard Christy,** went on the board and became a member of the association's executive committee at the same annual meeting.

* * *

Lester E. Crapse of **Southern Fertilizer and Chemical Co.,** Savannah, Georgia, was the pianist when the Savannah Industrial Management Club held a recent "get-acquainted night."

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Major W. Macbeth has been appointed office manager of the Salt Lake City offices of **Wilson and George Meyer and Co.,** which handles the distribution of fertilizers produced by the new **Western Phosphates** plant.

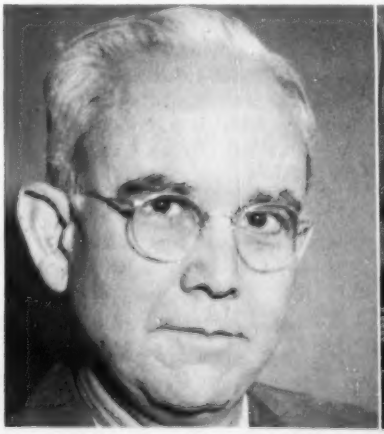
* * *

L. Douglas Weiford has been named assistant to the executive vice-president in charge of Government Relations by the **Stauffer Chemical Company.** Mr. Weiford, who began his career with Stauffer in 1929, was originally office and laboratory manager of the Stauffer Plant at Roanoke, Va. Mr. Weiford also directs Stauffer government sales work. His Washington headquarters are at 1500 Massachusetts Avenue, N. W. Telephone **HUdson 3-6570.**

* * *

Theodore A. Haschke has been appointed director of sales of the newly-organized industrial chemical division of **Stauffer Chemical Company,** its subsidiaries and associated companies, to take care of the increased scope of Stauffer's activities in this important field, it was announced by **Hans Stauffer,** executive vice-president. Mr. Haschke started in the chemical business in 1919 and joined Stauffer seven years later.

Left, George W. Moyers, vice-president, who heads the new phosphate minerals division and, right, Howard F. Roderick head of the new phosphate chemicals division of International Minerals & Chemical.



James H. Sibley, who has been promoted to salesmanager of the Clarksville, Tenn. district of International Minerals & Chemicals. He will direct an intensive information campaign on the proper use of plant foods in an area of about 150 miles around the plant. He joined them in 1952.

Left, Clarence E. Elsas, president Fulton Bag & Cotton Mills, who has been elected for the second term as president of the Textile Bag Manufacturers Association. Right, Jason M. Elsas, New Orleans, who has been made executive vice-president. A general sales office will be established in New Orleans under his direction. William N. Banks, not shown, a nationally known Georgia industrialist has been added to the Board.

David E. Pierce, nationally known chemical engineer, author and lecturer, has been appointed to the newly-created position of director of manufacturing control at **Diamond Alkali Company,** it was announced by **A. H. Ingley,** vice president-manufacturing for this leading producer of basic chemicals.

Formerly chief engineer of the **General Aniline & Film Corporation,** New York, for 10 years, Pierce previously had been associated in the same capacity from 1927 to 1942 with the **Rohm & Haas Company,** Philadelphia. His experience also includes three years in chemical engineering development work with the **Atlantic Refining Company,** Philadelphia. Before that he held similar assignments for seven years with **E. I. duPont de Nemours & Co., Inc.,** Wilmington, Del.

* * *

Calvin L. Dickinson, formerly plant manager of the Organic Chemicals Division of **Diamond Alkali Company** at Houston, Tex., has joined **American Potash & Chemical Corporation** as Advisory Engineer. Dickinson has been assigned to American Potash & Chemical Corporation's plant at Trona, Calif.

At the same time it was announced that **Frank A. Jessup** has assumed the position of Safety Engineer at the Trona plant. Jessup formerly was with **Pacific Indemnity Company** for 17 years.

* * *

H. J. Bensinger, Western Sales Manager, Heavy Chemicals Division, **American Potash & Chemical Corporation,** has resigned.

* * *

Richard J. Kenyon has recently been transferred to the Tulsa sales division of **Phillips Petroleum Company** as assistant division manager in charge of fertilizer sales. Kenyon started work in Phillips traffic division in November 1947, and transferred to the Houston, Tex., office of **Phillips Chemical Company,** a wholly owned subsidiary, in July 1949, where he was employed until his recent assignment to Tulsa.

* * *

The appointment of **J. T. Braxtan** as assistant manager of the Minneapolis plant of **Bemis Bag Co.** has been announced by **O. M. Smith,** manager. Mr. Braxtan is succeeded in his former position as office manager by **R. E. Copeland.**

Mr. Braxtan joined Bemis in 1934 as an auditor in the Accounting and Auditing Department, St. Louis.

Mr. Copeland has been with Bemis-Minneapolis as a bookkeeper and accountant since 1946.

* * *

Dr. George N. Hoffer, midwest manager of the **American Potash Institute,** recently received the Holbert Medal Award for significant contributions in the field of the plant sciences.

Hoffer is the sixth man to be so honored since the award was instituted.

In presenting the medal at a dinner meeting sponsored by Alpha Tau Alpha fraternity at Illinois State Normal University, **J. R. Holbert,** general manager of Funk Brothers Seed Company, cited Dr. Hoffer's technical knowledge and scientific contributions and his value as a leader of men. Hoffer inspired in his students and associates a lively curiosity and the desire to get into the fields and acquire facts with an open mind.

Holbert expressed his personal appreciation for all the opportunities which Dr. Hoffer afforded when Hoffer was a teacher at Purdue University and Holbert was a student. He recalled that he took all the courses possible under Hoffer and then spent most of his extra time in Hoffer's laboratory.

* * *

Dr. Roger Adams, internationally known chemist and educator, has accepted an appointment to the board of trustees of **Battelle Institute,** Columbus, Ohio.

The new Battelle Trustee played a significant role in the mobilization of American chemical research for the Armed Forces during World War II and, for that work, received the Presidential Medal for Merit and was appointed Commander of the Civil Division of the Most Excellent Order of the British Empire (C.B.E.). In the world of science, Dr. Adams, head of the University of Illinois's Department of Chemistry and Chemical Engineering, has achieved wide recognition especially for his research on stereochemistry and natural products.

* * *

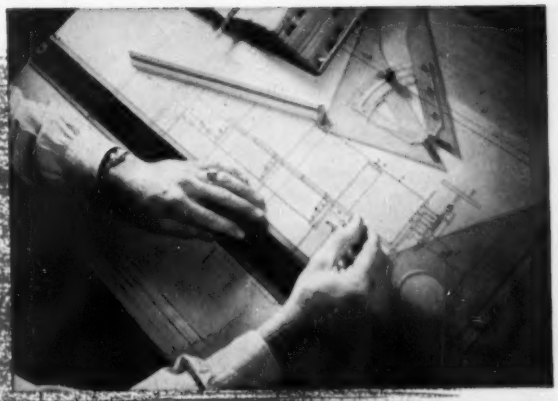
Two new managerial appointments in **Diamond Alkali Company's** recently established **chlorinated products division were** announced by vice-president **C. E. Lyon,** division manager.

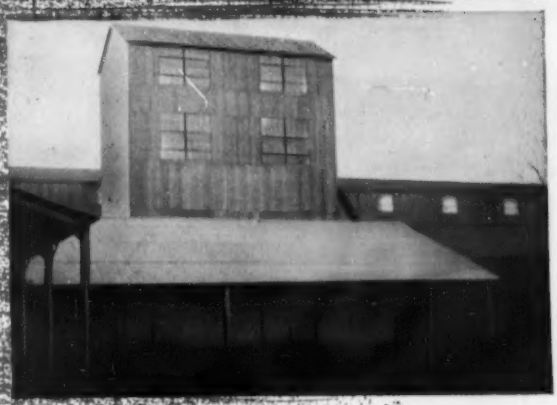
* * *

Bruce D. Gleissner has been named assistant general manager of the division. He will be concerned

from the drawing board to complete plant

for complete dry mixing or superphosphate plants





Extensive research and planning are necessary to assure maximum efficiency of a fertilizer plant. Each plant must be individually planned and constructed to meet the specific requirements of the location. Expert supervision must be given to the installation of equipment and construction of the building to realize full operating efficiency. From the original plan to the operating plant, a competent staff, with broad, practical experience, guide your plant through the design, engineering, manufacturing, fabrication and construction phases. Any or all of these services are available to you at one source with Davidson-Kennedy Company. In addition, they stand ready upon completion to train any personnel in plant operation. Davidson-Kennedy Company, manufacturers of a complete line of fertilizer machinery, offer you an engineering service second to none in the industry.

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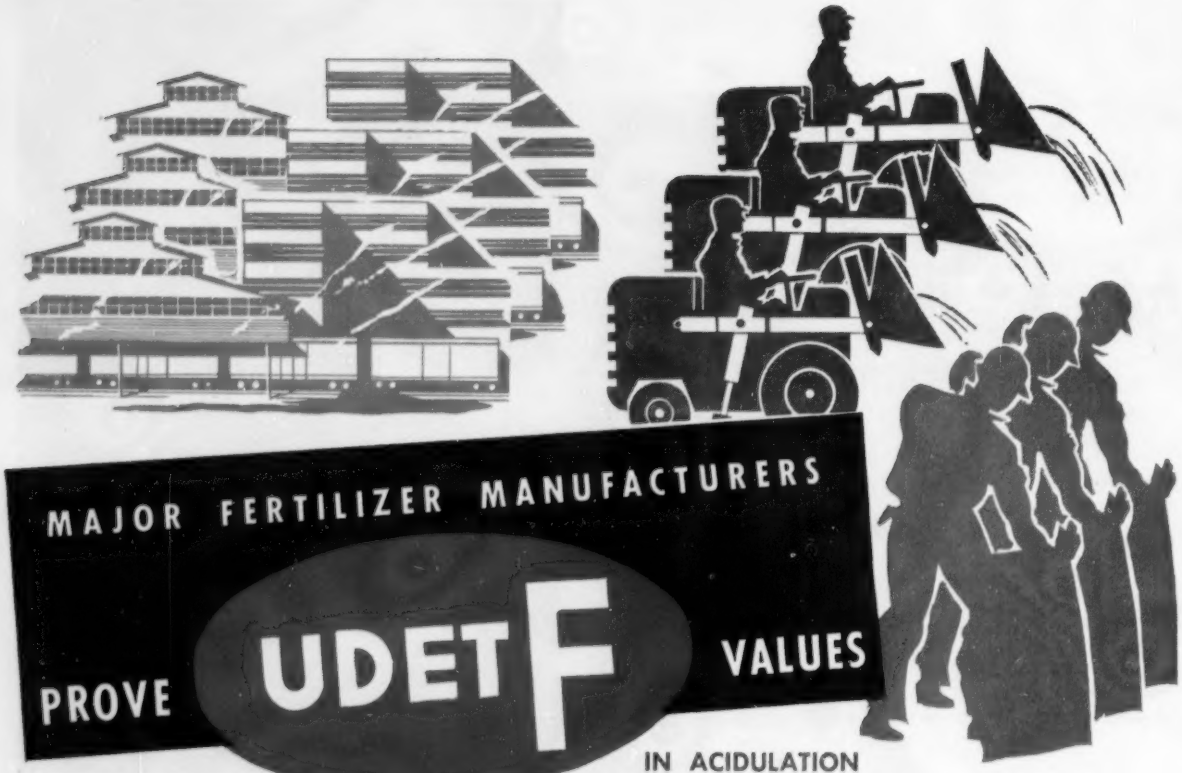

MAJOR FERTILIZER MANUFACTURERS PROVE UDET F VALUES

To offset variations in raw materials, atmospheric conditions, plant equipment and manufacturing methods, several prominent fertilizer makers ran analyses of both UDET F treated and untreated materials over extended periods of time.*

NOW CONSISTENT USERS

Results are in, and in every instance UDET F gave better conditioned piles ex-den, and complete analysis revealed lower insolubles. Conclusive proof: In every instance, manufacturers who made these tests are now consistent users of UDET F!

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IN AMMONIATION

UDET F, instantly soluble, disperses completely in the mix. Permits higher absorption of ammonia.

IN GRANULATION

UDET F inhibits cake build-up and equipment fouling. Increases production through less "down" time.

UDET 90-95F — a 90-95% active granular powder.
UDET 50 F—a 50% active free-flowing liquid.

TYPICAL UDET F RESULTS

- Den time reduced
- Insolubles reduced as much as 10%
- Super mills and screens 50 to 80% faster
- Piles softer, better conditioned ex-den
- Production increases range from 10% to 40%
- Efficiency of conversion to APA increases 4% to 5%

*Production facts and figures are available. Write for your copy.

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SYMPOSIUM
CHEMICAL ENGINEERING IN THE FERTILIZER INDUSTRY

Ammonia Institute Chemical Engineering Meeting

Wednesday, March 10, 1954

9:00 A.M. Introductory remarkes by presiding officer.

9:10 A.M. Trends in the Fertilizer Industry, by Edwin C. Kapusta, National Fertilizer Association.

9:50 A.M. A Continuous Ammoniator for Superphosphates and Fertilizer Mixtures, by L. D. Yates, F. T. Nielsson, and G. C. Hicks, Tennessee Valley Authority.

10:30 A.M. A Continuous Process for Production of High-Analysis Granular Mixed Fertilizers of High Ammonium Nitrate Content, by S. J. Martenet, E. Rauh and Sons Fertilizer Co.

2:00 P.M. A Pilot Plant Study of a New Process for Manufacturing Ammonium Nitrate, by J. J. Dorsey, Jr., Commercial Solvents Corporation.

2:40 P.M. The Chemico Urea Process, by Lucien H. Cook, Chemical Construction Corporation.

3:20 P.M. Factors Influencing the Changing Technology of the Fertilizer Industry, by J. A. Retzke, G. F. Sachsel, and R. B. Filbert, Jr., Battelle Memorial Institute.

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chiefly with furthering the commercial development of agricultural chemicals. **L. J. Polite, Jr.** has been promoted to the post of agricultural chemicals sales manager.

Both Gleissner and Polite have already assumed their new duties at the company's general offices in Cleveland.

* * *

J. Pollard Turman, president of **J. M. Tull Metal & Supply Co.,** Atlanta, whom we reported last month as being elected to the presidency of the local Rotary Club, now is also president of the Emory University Alumni Club.

* * *

William E. Chace, for seven years Director of Information of **The National Fertilizer Association,** has been appointed Assistant Public Relations Director of the **Manufacturing Chemists' Association, Inc., William C. Foster, president,** has announced. In his new capacity, Bill will assist Cleveland Lane, recently appointed Assistant to MCA's President.

* * *

Ashley Bragdon has moved from **Sumter Fertilizer Co.,** Sumter, S. C. to **Shore Fertilizer Co.,** Plant City, Florida.

* * *

J. Newton Hall has become president of **Pioneer Chemical Associates, Inc.,** chemical marketers and sales agents with headquarters at Denver. Hall was sales vice president of **Julius Hyman & Company** before organizing Pioneer in 1952.

This organizational development will not change the company's activities or services although greater emphasis will now be given direct representation of major chemical manufacturers. The company will continue to specialize in the handling of insecticide technical materials and concentrates, as well as other agricultural chemicals, the announcement states. Other officers of the corporation are **William S. Powers,** vice president and **A. S. Hall,** secretary-treasurer.

* * *

The appointment of **Jack E. Horton** and **Willard R. Hasbrook** to the staff of the **Utah Cooperative Association,** Salt Lake City, has been announced by general manager **W. B. Robins.**

Mr. Horton, formerly assistant manager of the Horsley Seed Company, Brigham City, Utah, has been named General Superintendent of the Kelly-Western Seed Division. Mr. Hasbrook, formerly manager of radio station KFXM, San Bernardino, California, has been named Sales Manager of PAX Brand Products and UCA Advertising Manager.

* * *

G. T. Harley, who has been manager of the New Mexico operations of **International Minerals & Chemical Corporation's** Potash Division since 1944, has been appointed special consultant to the Potash Division, according to an announcement by **A. Norman Into,** vice president in charge of the division. **Carl A. Arend, Jr.,** assistant manager of the New Mexico operations, succeeds Mr. Harley as manager.

* * *

R. A. Jones, sales manager of the Fertilizer Department, **Anaconda Copper Mining Company,** announces the appointment of **Everett E. Logan** as assistant sales manager. Mr. Logan has been associated with the Fertilizer Sales Department at Anaconda for the past six years as Office Manager along with assisting in sales work.

* * *

Michael H. Sloman has been made director of promotion for the merchandising division of **Monsanto Chemical.**

* * *

Alfred J. Dickinson, Virginia-Carolina vice-president has been made general chairman of the 1954 Tobacco Festival in Richmond.

Udet F. Bulletin Offerod Industry

Several prominent fertilizer manufacturers recently completed tests of the wetting agent, Udet F. Results of their experiments, made over a period of several months, are being made available in a bulletin by Universal Detergents Inc. of Long Beach, California, producers of Udet F.

The extended periods of testing offset variations in raw materials, atmospheric conditions, plant equipment and manufacturing methods.

Udet F was found to give increased average gains in the acid-to-rock reaction speed. Materials were softer both in the pile and after bagging and storing. Insolubles were reduced as much as 10 per cent. All phases of the experiments are included in the report. Copies may be obtained by requesting Bulletin #57 from Universal Detergents, Inc., 1825 E. Spring Street, Long Beach 6, California.

Dave Weatherly Forms Own Engineering Firm

The formation of The D. M. Weatherly Company, Industrial Engineers and Builders, has been announced by D. M. Weatherly. Home offices are located at 51 Wiltshire Drive, Avondale Estates, Georgia, a suburb of Atlanta.

Mr. Weatherly stated that this organization will offer a complete engineering service to the fertilizer industry. An important phase of company activities will be the consulting engineering work. Included in this phase will be assistance to manufacturers in solving operating problems, the preparation of reports, estimates, and economic evaluations on plant expansion and improvements.

In announcing the formation of this company, it was pointed out that the fertilizer industry has shown tremendous growth since World War II. Major technological improvements in plants and processes have occurred during this period. Many new processes are now being developed and perfected which should, according to Mr. Weatherly, result in even greater changes during the next eight years.

Prior to the organization of this company, Mr. Weatherly directed the design and construction of many important fertilizer production facilities. Several of these plants were the first of their type and process in the United States. He also has an extensive background of experience in atomic energy, heavy chemicals, and food processing.

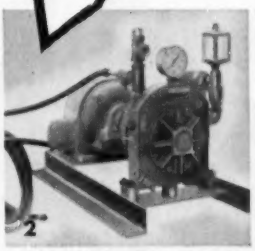
Transportometer Appoints Lee Redman

Sintering Machinery Corporation, Netcong, N. J., announces the appointment of the following sales representative to handle their complete line of continuous weighing and feed regulating equipment: Lee Redman Equipment Company, Phoenix, Arizona for the territory including the entire state of Arizona and neighboring portions of New Mexico.

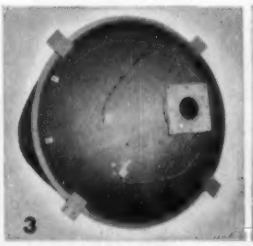
HAVE YOU OVERLOOKED ANY OF THESE IDEAS?

There are places in your fertilizer plants where low-cost Johnson accessories can profitably increase the efficiency of your bulk-material storage, batching and blending operations . . .

1 **Pivoted Distributor** feeds materials to multiple-section bins. Turns, locks by ground-level control.

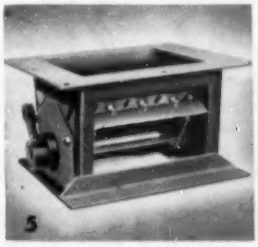


2 **Rotary Vane Compressor** supplies 7 cu. ft. air pressure per min. to aerate silos, bins. 15-lb. limit-relief valve.

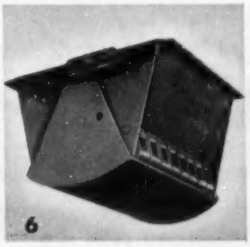


3 **Aeration Fittings** properly spaced in storage bins and silos keep bulk materials fluid, free-flowing.

4 **Bin Gauges and Signals** accurately register "hi-lo-levels". Automatic. Water and dust-proof.



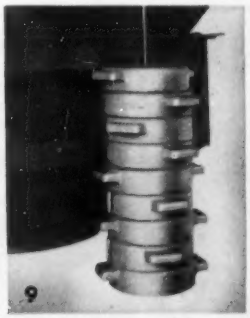
5 **Rotary Plug Valve** controls flow of finest materials. Plug works freely in self-aligning bearings.



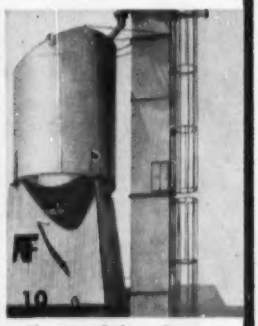
6 **Fill Valves** single-clam, radial-type, have choker weights on closing edge for jam-proof closing.

7 **Receiving Hoppers** all sizes, types for box-car, hopper-bottom car, truck, or bag delivery. Weather-tight.

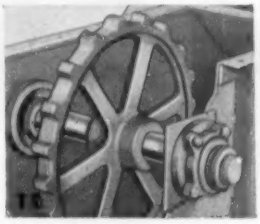
8 **Elevator Buckets** all-welded, light, smooth. Two types, 7 sizes. Steel chain has carburized knuckles.



9 **Butcher Test Weights** are available in sets of nine, 50-lb. calibrated units, and two 25-lb. steel hangers.



10 **Elevator Safety Cage** 28-in.-diameter ladder safety cage, welded to casing, costs only a few dollars per foot.



11 **Chain Sprockets** 19-tooth chilled-rim cast iron with heavy split hub; 12-tooth cast-chrome manganese.

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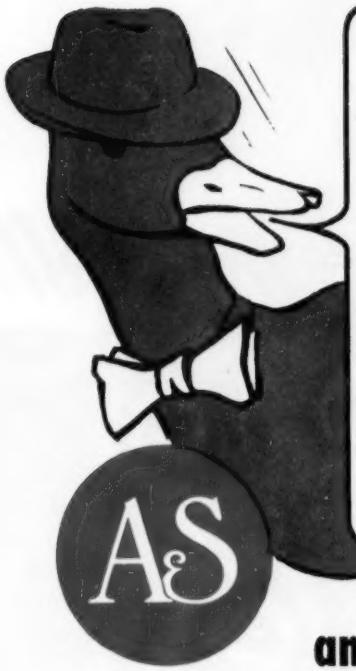

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Yes, Arkell & Smiths' extensive tests prove that DUK-PAK has greater resistance to exposure, moisture and to weather — like the proverbial you-know-what! What's more, DUK-PAK has a special, "built-in" reinforced quality which makes it resistant to scuffing and abrasion. Where ordinary multiwall bags might "give-way" under rough handling, DUK-PAK holds its own, longer. This adds up to:

1. DUK-PAK provides dependable packaging for products that don't like water, moisture, or dirt, and

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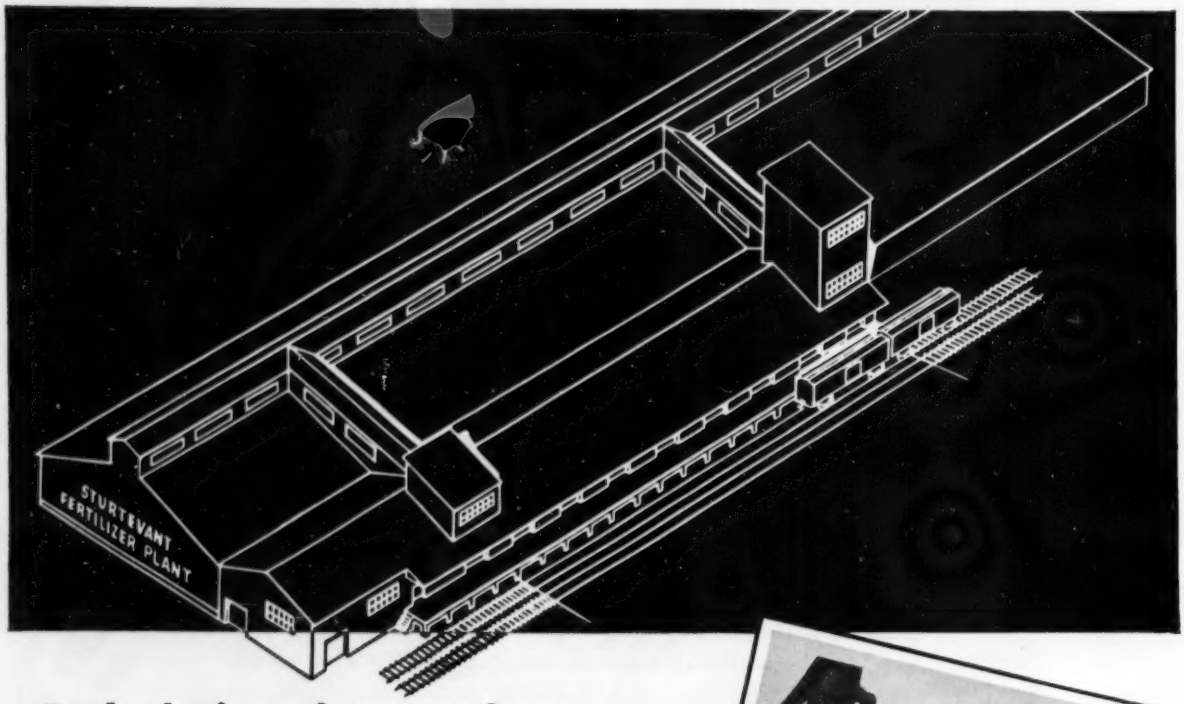

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Pointing to the new spray deflectors for injecting liquids into fertilizer mixes is Herbert B. Davis, Spencer Chemical Company, who was instrumental in the design of the new system.

SPENCER ANNOUNCES NEW SPRAY SOLUTION INJECTION

A new method of introducing solutions and anhydrous ammonia into fertilizer mixes was announced late in January by Herbert B. Davis, South Carolina representative for the Spencer Chemical Company. The new process is designed to help manufacturers to improve the condition of their fertilizer mixes, to reduce the hazard of fumes, and to enable them to better meet price competition by utilizing lower-cost nitrogen sources.

With a record of seventeen successful installations in South Carolina since last July, the improved injection process shows promise of further lessening the reversion of available phosphoric acid as well as reducing the tendency of the mix to stick to the inner surfaces of the mixer.

Since competition from a price standpoint has in recent years caused many manufacturers to use more lower-cost nitrogen from solutions in making their fertilizers, problems have mounted as the content of ammonium nitrate and other hygroscopic materials were raised to or above the critical point.

While many producers have elected to use solutions higher in free ammonia but lower in ammonium nitrate and water content, this use of free ammonia solution has often increased the ammoniation rate above 4.8%, at which point fumes become a serious problem.

To eliminate these difficulties, the designing of a more efficient arrangement for adding these ingredients to the mixes became a paramount objective. After considerable research on the problem, Spencer's Herbert B. Davis was joined by Floyd N. Miller, Southeastern Technical Service Representative for the Company, in the development of the first workable unit.

While the apparatus can be readily adapted to any mixer, individual variations and modifications make the installation of each set of nozzles a custom job. In general, the heavy lead-in pipe is mounted in the rear center of the mixer with deflecting nozzles extending toward the bottom center line within one inch of the flights. Anchored to a flange at the chute entrance, it is inserted through the original opening made for a spray pipe in the bottom center of the seal ring. Thus, in case of an obstruction, the pipe will turn in a radius that would clear the flights.

The solutions or ammonia are introduced to the mix through half-inch lead distribution pipes, tapped into the heavy entrance pipe at five-inch intervals. Stability is assured by half-inch cold-rolled steel braces angling down from the outside edge of the entrance pipe to a junction with the trailing side of the distributing pipe about three inches above the deflector. The two-inch nozzle is designed to deflect the solution in an arc meeting the spray from each adjacent nozzle at the point of penetration into the mix. The deflector vein is turned 45 degrees toward the direction of mixer rotation, away from the approaching mix to avoid the danger of clogging and to provide self-separation of the mass so that maximum distribution is allowed.

In a dual-pipe arrangement, the nozzles carrying the anhydrous ammonia are capped above the deflecting vein and distribution is effected through an opening two inches wide and one thirty-second of an inch high. In both dual and single injectors, one ¾-nch quick-opening valve is employed on an air line to eliminate vapor fumes during discharge of the mixer, since the solution outlets are in the fertilizer and cannot get air to break the line seal. The air valve is used to blow out the system on every shut-down, exhausting the pipes and avoiding set-up on the deflecting veins and in the orifices.

In practice, Spencer engineers have determined that four deflectors are adequate for a one-half ton mixer, and five for a one ton mixer. A one-and-a-half ton unit requires seven nozzles, while eight are ample for a two ton mixer.

The new nozzles are available at Thackston-Davis Supply Company, Columbia, S. C.

FERTILIZER SAFETY EXECUTIVE COMMITTEE HOLDS SESSION

Here is a photograph taken at the January 13 meeting of the Fertilizer Section Executive Committee. A considerable amount of work has been done. At a meeting of the Engineering Committee which took place the 12th, the Anhydrous Ammonia Data Sheet was reviewed. It will be published in the February issue of the National Safety News and subsequently will be available as a pamphlet. On the 13th at the meeting of the Executive Committee, a safety graph on the operation of two wheeled hand trucks was reviewed. This will be ready for publication in a few weeks.

E. O. Burroughs, Chairman of the Visual Aids Committee, was appointed a Committee of one, to present plans for the preparation of a sound slide film on safety in the fertilizer industry at the next Executive Committee Meeting, the 13th of June, at the Greenbriar. Ray Murray, Swift & Company, W. E. Powell, Liberty Mutual, and Stewart A. Washburn, National Safety Council, were appointed a committee of three to develop a series of four employee safety publications. These will probably be two eight page 3 x 7 booklets and two safety instruction cards in color, and will be ready by June. Work is proceeding on Data Sheets on the following subjects: blasting, mechanical handling of bulk materials, organic phosphate insecticides and heloginated hydrocarbon insecticides. Another Data Sheet on ammoniating solutions is almost finished.

In the photograph are: left to right clockwise around the table, Walter W. Lehle, Mathieson Chem.; A. B. Pettit, Davison Chem.; R. R. Murray, Swift & Co.; John S. Roszel, Mathieson Chem.; F. W. High, Baugh Chem.; Harold Krueger, Snyder Chem. Co.; C. W. Best, Robertson Chem.; Mike C. Ellison, Mississippi Chem.; W. E. Powell, Liberty Mutual Insurance Co.; Curtis A. Cox, Virginia-Carolina Chem. Corp.; Vernon S. Gornto, Smith-Douglass S. A. Washburn, Nat'l. Safety Council; Ed Kapusta, NFA; John E. Smith, Spencer Chem. Co.; Jack McKenna, Lion Oil Co.; R. E. Bennett, Farm Fertilizers; E. O. Burroughs, F. S. Royster Guano Co.; Adolph Ecklund, Farm Bureau Service; Grayson Morris, Southern Sales Coop.; W. A. Stone, Wilson & Toomer; Louis Wilson, APFC; Ralph Frazer, Summers Fertilizer Co.

When CF visited Savannah recently (see PP 36-37) we saw this sign on the Davison Chemical plant. 2319 days, when you figure it, runs into years without a lost time accident . . . and any member of the Safety Council—fertilizer manufacturer or not—would be proud of this record . . . and smart to display it where it will encourage more of the same.

The DAVISON CHEMICAL Co.
THE BEST SAFETY DEVICE IN THE WORLD IS A CAREFUL MAN
THIS PLANT HAS WORKED
DAYS WITHOUT A LOST TIME ACCIDENT

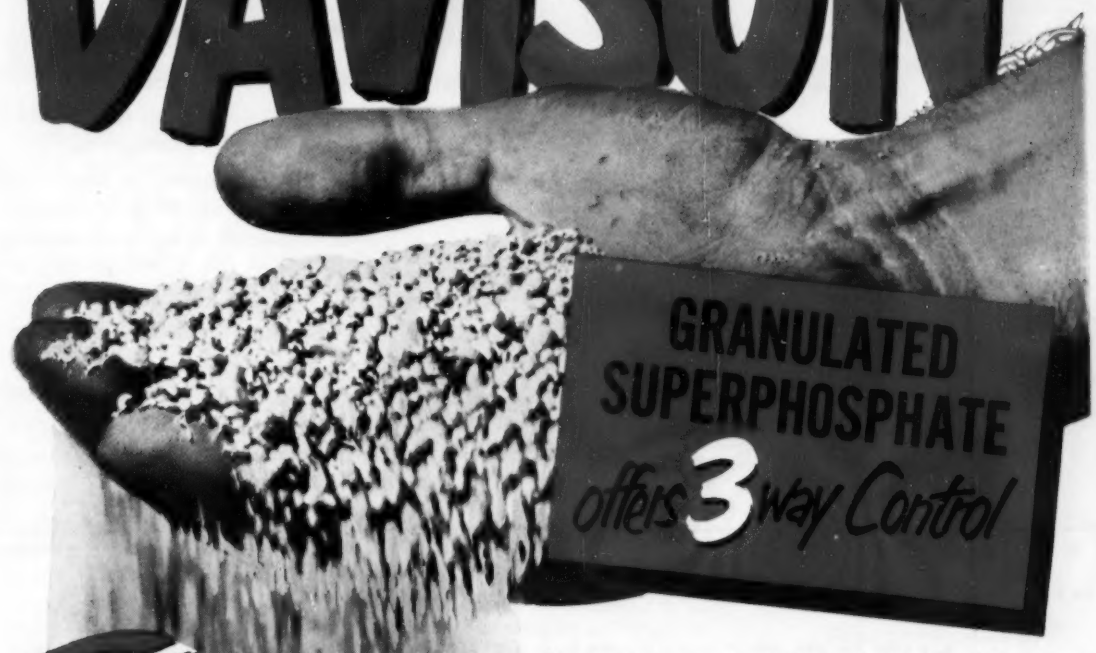
The meeting was called to order by the chairman, Vernon Gornto, who in his opening remarks expressed delight at the attendance at this meeting.

It was decided that the summer meeting should be held at White Sulphur Springs, W. Va., Sunday, June 13, 1954, this being an open date between the two Fertilizer Association meetings customarily held in this area.

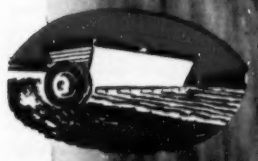
The question arose as to a proper and logical place for the December meeting of the Executive Committee. For the purpose of making a recommendation for the meeting place, the following committee was appointed by the chairman and instructed to report their recommendations at the summer meeting: Wayne High, Chairman, Ed. Kapusta, Louis Wilson, Grayson Morris, Harold Krueger.

Wayne High, chairman of the Contest Committee, stated that every effort is being made to obtain much greater participation in the contest for the year 1954. Mr. High proposed a plan whereby members of the committee would be asked to aid in the promotion of the contest in their respective areas of the country. Mr. High reported that 160 plants returned the completed questionnaire on accident experience which was distributed by his committee recently and that a compilation of these returns showed a frequency rate of 13.87 and a severity rate of 2.53.

DAVISON



1. STORAGE CONTROL—will not cake or lump while in storage.



2. APPLICATION CONTROL—drills free and even . . . does not bridge over in the drill.

3. FOOD CONTROL-supplies uniform amount of plant food at desirable rates.

Davison's Granulated Superphosphate with 3-way control can mean added sales for you!

No longer is it necessary for you or the farmer to worry about lumping or caking . . . Davison's Granulated Superphosphate will store without becoming hard or caked. And when the farmer starts to apply Granulated Superphosphate in the field he will find there is no dusting nor will it bridge over in the drill. Granulated Superphosphate drills freely and evenly giving complete coverage. Because of the granular structure, plant food is released at desirable rates.

For added sales points be sure to get *Davison's Granulated Superphosphate with the 3-way control!*

Progress Through Chemistry

THE DAVISON CHEMICAL CORPORATION

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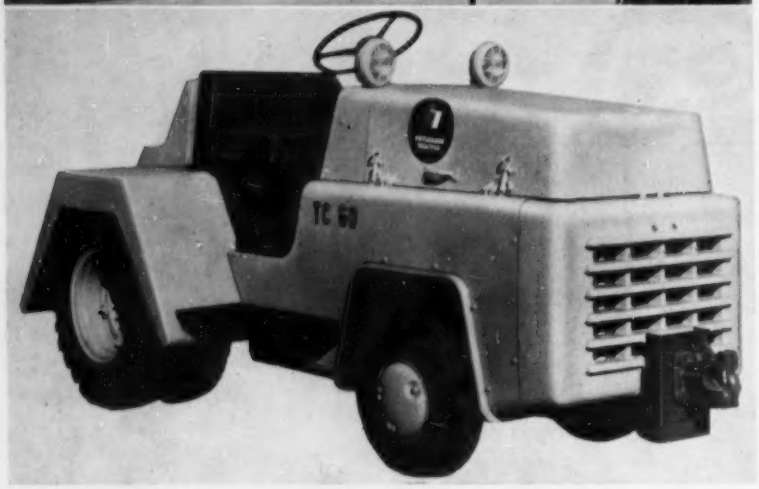
PRODUCERS OF: CATALYSTS, INORGANIC ACIDS, SUPERPHOSPHATES, PHOSPHATE ROCK, SILICA GELS, SILICOFLUORIDES AND FERTILIZERS



Top: Here's why the American Association of Nurserymen named the Frank G. Hough Co., Libertyville, Ill. Payloader manufacturers as an award-winner. The plant is surrounded by more than three acres, beautifully landscaped. Below: The new 1954 model TC-60 Payloader towing tractor, which has a drawbar pull of 6,000 pounds, and many improvements that add to compactness and maneuverability.

Campbell Announces 1954 Model Cabs

Campbell Detachable Cab Co., Wauconda, Illinois, announces its new line of streamlined operators' cabs for all models of Hough "PAY-LOADER" Tractor-Shovels.

Campbell 1954 Model cabs are also available for most standard makes of crawler and wheel-type tractors in addition to the Hough "PAY-LOADER" line of tractor-shovels and tractors.

For literature and specific information on Campbell Cabs for your equipment, consult your tractor Distributor or write Campbell Detachable Cab Co., Wauconda, Illinois.

Call TULL in ATLANTA when installing or repairing a

NITROGEN SOLUTION SYSTEM

Because—

WE KNOW OF NO OTHER PLACE WHERE A SIMPLIFIED PACKAGE OF CERTIFIED COMPONENT PARTS CAN BE FURNISHED FOR IMMEDIATE SHIPMENT.

Each part is guaranteed to give 100% service in the corrosive atmosphere of Nitrogen Solution.

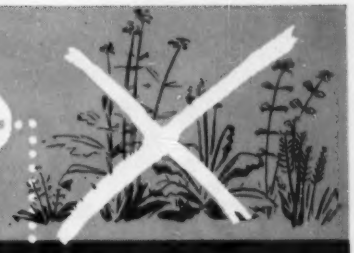
SO WHY TAKE A CHANCE on picking up items from miscellaneous sources. Purchase parts that are matched and guaranteed by the oldest supplier of fertilizer plant fittings.

SEND FOR YOUR BOOKLET, "The Installation and Operation of a Nitrogen Solution System." to P. O. Box 4628, Atlanta 2, Ga.

J. M. TULL METAL & SUPPLY COMPANY, INC.

285 Marietta St., N.W. **ALpine 3871** **Atlanta 3, Ga.**

TRONABOR*



A NEW CONCENTRATED BORATE WEED KILLER

TRONABOR* is a new concentrated borate weed killer containing not less than 13.7% Boron and 44% B_2O_3, combining the properties of a general-contact weed killer and soil sterilant. **TRONABOR** is most effective when applied dry but can also be used in solution as a spray. When you use **TRONABOR** the job is done! Most weed growth is destroyed for a year or longer. Under favorable conditions **TRONABOR** may give control up to three or four years. When applied before or during seasonal rainfall it is dissolved and permeates the soil to the root zone of the plants where it destroys and prevents re-growth until removed by normal leaching. **TRONABOR** is safe, easy to apply, non-corrosive and non-flammable. No other type of weed killer combines so many advantages.

HOW AND WHEN TO APPLY TRONABOR*

In dry form, TRONABOR is easily applied by hand-broadcasting. On larger areas one of several available types of fertilizer or lime-spreaders is recommended. It should be distributed evenly and in sufficient amount. It is better to over- than under-apply, since too little may give unsatisfactory results. Where practical, standing weed growth should be cut to a height of 4 to 6 inches to insure that the TRONABOR is spread evenly. On bare slopes raking in will prevent the material from washing away during heavy rains.

• • • • •

TRONABOR is best applied in the Fall, Winter or early Spring when rainfall carries it into the root area of the soil. TRONABOR must be dissolved to be effective. For annuals and shallow-rooted perennials apply when plants are young and tender. Deep-rooted perennials should be treated in Fall or Winter. Apply TRONABOR at the rate of 7½ to 11 pounds per 100 square feet, depending upon severity of conditions. The higher application should be used on steep slopes, where weed growth is thickly matted or well established, or where the soil is hard and impervious or very sandy or porous. Spot retreatment of some areas at about ½ the above dosages may be advisable later.

Trade Mark Registered

TRONABOR IS..

Easy to apply
Concentrated
Non-poisonous
Non-selective
Non-flammable
Non-corrosive to iron or steel
Non-injurious to clothing
Economical
Soil Sterilant

TRONABOR KILLS..

Russian Knapweed
Canada Thistle
Bindweed
Toad Flax
Leafy Spurge
Whitetop (Hoary Cress)
Johnson Grass
Poison Ivy and Oak
St. Johnswort (Klamath Weed)
And many others.

American Potash & Chemical Corporation

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Past president and incoming officers of the Southern Weed Conference for 1954. (Left to right) Dr. W. B. Ennis, Regional Director, Division of Weed Investigations, USDA, State College, Mississippi, past president; Dr. W. C. Shaw, Division of Weed Investigations, A.R.S., U.S.D.A., Beltsville, Maryland, incoming president; Dr. G. C. Klingman, North Carolina State College of Agriculture and Engineering, Raleigh, North Carolina, vice-president; Dr. E. G. Rodgers, University of Florida, Gainesville, Florida, secretary-treasurer.

7TH ANNUAL WEED CONTROL CONFERENCE

Several hundred agricultural leaders, equipment and pesticide makers and a lot of farmers turned up in Memphis, Tennessee January 11-13 to discuss their mutual weed control problems, under the chairmanship of Dr. W. B. Ennis, Jr., Mississippi A.E.S. who opened the program by outlining the What, Where and Why of the meeting.

Dr. Ennis, this year's Conference president, expressed satisfaction with the progress that has been made on weed control since the Southern Weed Conference was organized seven years ago.

"The cooperation of research, industry, extension and other public services has given us a great amount of know-how with which many notable advances in weed control have been made here in the South. The battle is far from won, however, and we must continue our search for chemicals and the techniques of using those chemicals we now have to do the optimum good," he stated.

Dr. W. C. Shaw, U. S. Department of Agriculture, newly elected president of the conference, reported that the agricultural chemical outlook indicates that improvements in herbicides will come from the four basic chemical groups now being most widely used.

"Our greatest need now," said Dr. Shaw, "is for close-knit cooperation between research and the farmer."

In addition to Dr. Shaw, other officers named for the 1955 Southern Weed Conference include Glenn C. Klingman, North Carolina State College of Agriculture and Engineering, vice president; and E. G. Rodgers, University of Florida, secretary-treasurer. Next year's meetings will be held at St. Petersburg, Florida.

A number of new agricultural chemicals were discussed for the first time. Among the more interesting of the new herbicides reported are Silvex, which has killing powers said to equal 2, 4-D, but having less drift hazard to cotton; Natrin, which shows promise as a pre-emergence herbicide and is not damaging to plants when applied to foliage; ammonium nitrates plus wetting agents which show promise as a dual purpose herbicide-fertilizer.

It was also revealed that Urea compounds will be made available for commercial use within the year, however these are not being recommended by all states.

Dalapon, another new herbicide, shows promise for controlling Johnson and other grasses.

A new defoliation chemical and a new machine to apply it were spotlighted in opening sessions.

O. B. Wooten, agricultural engineer, Delta Branch Experiment Station, Stoneville, Miss., said the new chemical, Amino Triazole, has shown great promise in most areas of the Cotton Belt as a "second-growth inhibitor" as well as an effective defoliant.

A new self-propelled spraying machine was reported to have done a creditable job in the irrigated cotton areas of the West in applying defoliants. Herbert Miller, U. S. Department of Agriculture engineer at Shafter, Calif., and Robert S. Bone of the Food Machinery Corporation, Fayetteville, Ark., said the machine was designed especially for the irrigated cotton areas where the foliage is extremely rank and tangled.

Mr. Wooten discussed another tractor-mounted sprayer of a different design, geared to the rain-grown cotton areas of the Belt. Rain-grown cotton, he explained, is not as rank and does not lodge as badly as irrigated cotton.

Other subjects included defoliation as a means of insect control, discussed by Dr. F. C. Bishopp, coordinator of the Pink Bollworm Research Project, Brownsville, Texas, and the relationship of defoliation to cotton market values, discussed by E. E. Berkley, director, ACCO Fiber and Spinning Laboratory, Anderson, Clayton and Company, Houston, Texas.

Grady B. Crowe, agricultural economist and H. R. Carns, physiologist, Delta Branch Experiment Station, Stoneville, Miss., discussed the general benefits of defoliation.

A symposium, led by J. Ritchie Smith of the National Cotton Council evaluated various benefits. Representing the West was H. C. Miller of Shafter, Calif.; the Southwest, F. C. Elliott of College Station, Texas; the Mid-South, T. J. Johnston, agricultural engineer, Stoneville, Miss.; and the Southeast, W. A. Balk, of Blackville, S. C.

In earlier sessions, R. F. Colwick, State College, Miss., led a panel discussion of advances in chemical defoliation application technique.

Claude L. Welch, director of the production and marketing division, National Cotton Council, welcomed the delegates to the conference and told them the annual meeting had grown in attendance as well as scope and content of its objectives.

"Obviously, it has been compelled to grow," Mr. Welch added. "As a quick survey of the proceedings will show you, a lot of sound progress has been made. We have learned more about the physiology of the defoliation process, and we have seen dramatic progress in the development of practical techniques for accomplishing it."

W. H. Tharp, physiologist, Division of Cotton and Other Fiber Crops and Diseases, Agricultural Research Service, Beltsville, Md., was Conference Chairman.

Four papers were presented dealing with three years' study of cotton applications with Du Pont's family of substituted urea herbicides. This work on cotton began in 1951 with tests of substituted urea herbicides for pre-emergence weed control. One of these compounds shows great promise, the scientists reported. A formulation of this new compound identified as "Karmex" DL herbicide, will be available in limited quantities in a few cotton growing areas this year. It is a liquid suspension, with each gallon containing three pounds of the active ingredient, 3-(3, 4-dichlorophenyl)-1, 1-dimethylurea. One gallon of "Karmex" DL diluted with water will treat six to ten acres of cotton, depending on the width of the application band and spacing of the rows.

In 1953, growers cooperated in field tests on cotton farms in eleven states. These tests confirmed previous experimental evidence that "Karmex" DL would give good control of weeds in cotton. All applications were made in bands centered over the planted row, and planting and treating were generally combined in one operation.

Results of these tests also indicate that "Karmex" DL herbicide has a good margin of safety so far as cotton plants are concerned. Yields from areas treated with the compound were equal to or better than yields from areas where common weed control practices were used. Stands were about equal in treated and untreated rows. Where replanting was required because of weather, no adverse effects were noted on cotton planted after the compound had been applied.

One of the four papers dealt exclusively with what happens to "Karmex" herbicides under field conditions in three types of soil. These soils were sampled at Raleigh, N. C.; Palma Sola, Florida; and Essen Lane, Louisiana. On the basis of chemical and biological tests, it was concluded that applications of these herbicides at rates as high as four pounds per acre would be reduced to harmless levels in each soil type within eight to 12 months after application. Biological studies indicate that soil microbes play a role in the disappearance of these compounds from the soil. Furthermore, it was found that residues disappeared more rapidly at 80-degree temperatures than at 40-degree temperatures.

The four Du Pont scientists who presented the papers were Dr. M. B. Weed of Baton Rouge, La., and Robert Sutton, Dr. G. D. Hill, and Dr. L. E. Cowart, all of Wilmington, Delaware. In addition to the Du Pont studies, "Karmex" herbicides have been tested under code names by the U. S. Department of Agriculture and by the State Experiment Stations of North Carolina, South Carolina, Georgia, Texas, Louisiana, Arkansas, Oklahoma, Tennessee and Mississippi.

8th Cotton Insect Control Meeting—December

The eighth annual Beltwide Cotton Insect Control Conference will be held next December 2 and 3 at the Hotel Adolphus in Dallas, the National Cotton Council has announced.

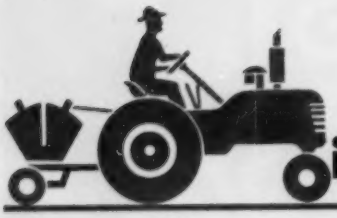
Delegates to this annual Council-sponsored meeting will include leaders in entomology, agricultural chemistry, farm equipment manufacture, and the cotton industry. They will discuss and exchange information on latest developments in the continuous fight against cotton pests.

Trade-Marks Adopted For New Weed Killer Family

Two trade-marks have been adopted by the Du Pont Company to identify its substituted urea herbicides. This family includes CMU weed killer and a number of related compounds.

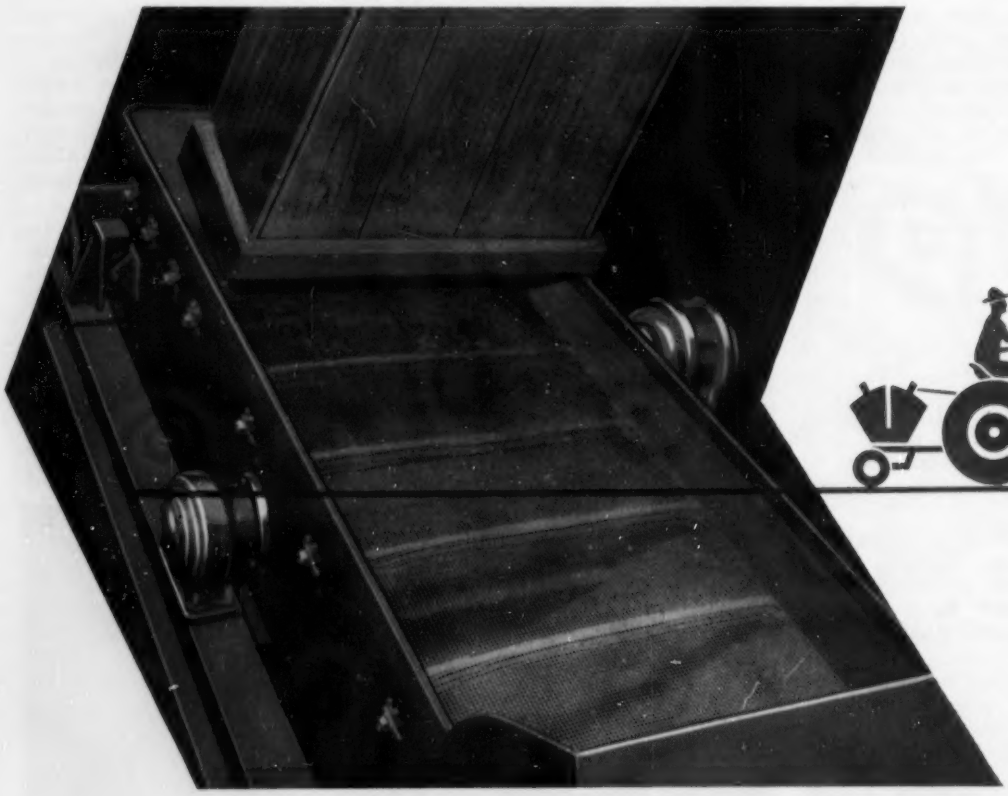
Agricultural herbicide formulations of these compounds will bear the trade-mark "Karmex," while the trade-mark "Telvar" will apply to the industrial weed killer formulations.

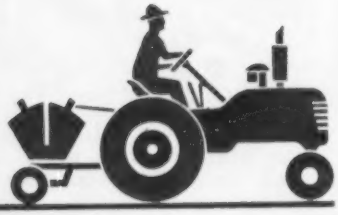
HAILED AT WEED CONFERENCE—Good to excellent results were attained by all state testing services reporting on Chloro IPC, a new weed killer that prevents grasses from choking out young cotton plants, at the Southern Weed Conference, held in Memphis last week. Unlike other weed killers, Chloro IPC is applied to the soil before the grasses start to grow and prevents them from germinating. (Note weed growth in untreated bands in the picture above in comparison with the treated cotton plant rows.) Major producer of Chloro IPC is Columbia-Southern Chemical Corporation, subsidiary of Pittsburgh Plate Glass Company.



two SIMPLICITY gyrating screens team up to speed basing operations in fertilizer production

Two Simplicity Gyrating Screens keep operations humming at this large Southern fertilizer plant. Working as a team, they handle the output of two 14" x 7" bucket elevators. A 3' x 8' Model "LS" Simplicity Single Deck Screen handles as much as 50 tons of super phosphate per hour; and a 3' x 6' Model "C" Simplicity Single Deck Screen handles all other fertilizer ingredients at about the same rate of speed. Both screens are set at 20° and rotate with the flow of materials. There is virtually no blinding, as the screen in the photo, which has not been brushed or cleaned, shows. The splendid performance of this Simplicity team is typical of the fine job Simplicity Screens are doing throughout the fertilizer industry. They can help speed up operations and increase production in your plant, too. Write us today for complete information.





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NAC ANNOUNCES SPRING MEETING AT HOUSTON

The agenda for the spring meeting of the National Agricultural Chemicals Association was released January 27, by the executive secretary, Lea S. Hitchner. The meeting will be held at the Shamrock Hotel in Houston, Texas, March 24, 25 and 26. Hitchner reported that the overall theme of the meeting will be to point up many of the problems in distribution, sale and use of pesticides which have arisen during the past few years of production of these agricultural chemicals.

The president of the association, Paul Mayfield, will open the day's events with a presidential address at 10:00 a.m. March 24. Mr. Mayfield is General Manager of Naval Stores Department, Hercules Powder Company. Presiding officers will be Mr. Mayfield and NAC vice president, W. W. Allen of Dow Chemical Company.

Commissioner of Agriculture John C. White, Texas State Department of Agriculture, has accepted an invitation to address the group the first day. Dr. R. D. Lewis, Director of the Texas Agricultural Experiment Station, will review some of the research and development of chemicals for agriculture in the Southwest. He is expected to point up the importance of insecticides, fungicides and other agricultural chemicals in the progress of Texas agriculture.

J. A. Walker, Credit Manager of the Standard Oil Company of California, is scheduled to discuss the credit situation as it pertains to the agricuitural chemicals industry.

Dr. Stanley B. Freeborn, Provost of the Davis California Station of the California College of Agriculture, is expected to present an address on the value of pesticides and their contribution toward raising standards of living by improving the public health and by improving the quantity and quality of food in the United States. Dr. Freeborn's address will complete the business activities of the Association on the first day.

The evening of March 24 will be devoted to a reception for members and guests of the group.

Both the Thursday and Friday business sessions will be restricted to members and invited guests only, according to the program. A golf tournament will be held Thursday afternoon and either a banquet or barbeque will be held Thursday evening for Association members and guests, Hitchner stated.

Correction of Iron Deficiency

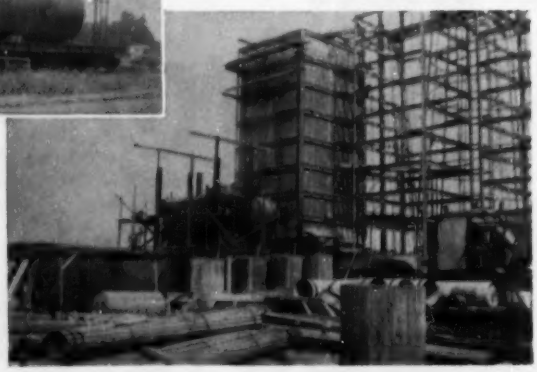
Metal deficiencies in many crops can cause severe damage, low yields and even death of the plant or tree. These deficiencies may be corrected and cured by replenishing the trace metals in the soils. Iron deficiency is particularly important in citrus crops.

Iron Tetrine, the iron complex of ethylenediamine tetraacetic acid, cures and prevents iron deficiencies in agricultural crops. This iron compound has produced sensational results in curing this disease in citrus crops in the Florida acid soils. Tests and actual experience have shown this good effect is not limited to citrus crops but that the benefits can be obtained in other crops and flowering shrubs.

Iron Tetrine contains 12% iron and is a free-flowing powder. It is not hygroscopic and can be spread readily by itself, blended with carriers, or mixed with fertilzers. ⅓ to ½ pound is used in treating citrus trees by simply placing the Iron Tetrine at the base of the tree.

Additional information and samples may be obtained from Glyco Products Co., Inc., Brooklyn 1, New York.

Highway Equipment Company, Cedar Rapids, Iowa have developed this New Leader trace-element hopper, which is now available on New Leader spreaders. It offers a new, economical way to apply essential elements in trace quantities, and has a capacity of 500-600 pounds.



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NO RAMMING OR JAMMING! NO SPINNING OF WHEELS WHEN LOADING BULKY OR "PACKED" MATERIALS

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DIGS IN WHILE STANDING STILL!

A HIGHLY MANEUVERABLE POWER SHOVEL

Lessmann LOAdALL scoops up big loads of the most heavily compacted ingredients or finished fertilizers . . . does it in 5 seconds while standing still! Extra hydraulic cylinders supply Hydraulic Power Crowd. This means *loading* with hydraulics which eliminates ramming and spinning of wheels . . . *minimizes repairs, reduces maintenance!* Dozer blade is easily attached for yard maintenance. Crane-hook, lift forks, snow and trash buckets are also available.

9 FT. DUMPING CLEARANCE

LOAdALL has clearance for the highest trucks, bins and mixing hoppers. It loads or unloads at any height from 12" below wheel level to 108" above. Wheelbase of 73" and 12' turning radius make it highly maneuverable.

52" REACH

Here's a full 4'4" reach at maximum clearance! LOAdALL carries load close but quickly boosts it *'way out ahead* for easier loading . . . another advantage of Hydraulic Power Crowd.

Check These Features!

- **STANDARDIZED PARTS.** Ford, Timken, Vickers, Bendix, etc., assure highest quality components and low-cost servicing.
- **SAFETY.** Operator has unrestricted visibility and is protected from loader arms.
- **EASY HANDLING.** Full reverse shifting gives LOAdALL four speeds forward and four reverse. Three simple, conveniently located hydraulic controls assure efficiency.
- **LOW COST.** You save on first cost, operating costs and maintenance costs with a LOAdALL.
- **LOAdALL BUCKETS.** Available with capacities of ⅛, ¾, ⅞, 1, 1¼ and 1½ yards.

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COMING: ZERO PASTURES

BRUCE POULTON
New Jersey AEF

Instead of sending the cows to pasture let's bring the pasture to the cows! That's what we've been doing at the Dairy Research Farm this summer. About 50 head of our big Holstein cows were not on pasture all summer, but they had an abundance of fresh green forage to eat.

Each day at 7 a.m. and 2 p.m. a wagon load of green feed was harvested with a sickle-bar forage harvester and hauled to the barn for feeding. The cows were given an opportunity to eat all of this green feed that they could consume.

Dairy farmers have long agreed that a good part of the grass in a pasture is wasted by the cows. Some of it is trampled and some contaminated by droppings. Estimates of the amount of grass wasted by grazing cows vary up to 25 percent of the total grass available. This wastage represents an economic loss to dairymen that is becoming increasingly critical as the value of an acre of land increases. By cutting the grass and taking it to the cows it is possible to harvest all the forage grown on an acre of land and eliminate these grazing losses. This saving could conceivably enable the farmer to carry more cows per acre.

In addition to this increased carrying capacity "zero pasture" also might enable dairymen to harvest their pasture at its proper stage of maturity. A "zero pasture" system will eliminate the problem of supplying water on pasture and fencing pastures. Perhaps the most important advantage of this type of feeding system is the elimination of summer slumps in milk production that occur during a dry spell when pastures get short. Many cows never recover from this slump during the same lactation.

The purpose of the trial that was conducted at the Dairy Research Farm was to explore the economics of a "zero pasture" program. Records were kept to determine the additional labor requirements for harvesting the forage, hauling and feeding it. The total amount of feed grown per acre was determined, finally the variation in daily milk production level was noted.

Preliminary results obtained during the summer of '53 show the following:

1. The fifty cows on the trail consumed an average of 92 pounds of green feed daily. This green feed furnished the cows with almost 19 pounds of dry matter a day.

2. The persistency of production of the cows that were green fed was greater than those that were pastured in a conventional manner. The cows on pasture dropped off in production badly several times during the summer when pastures were short.

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★ Engineered for Today's Modern Spreading Problems
★ No chains and sprockets to give trouble
★ No friction clutches to slip in muddy or snowy conditions
★ No series of countershafts to get out of line

SIMPLIFIED
MODERNIZED
PRACTICAL

Here's the tops in
Motor Driven Spreaders

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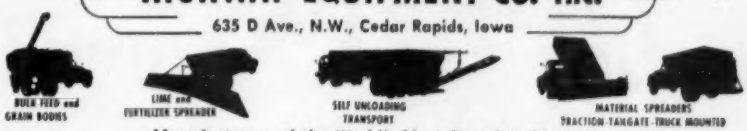
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3. The labor requirement for cutting forage twice daily for a herd of 50 cows was 2.76 hours. This time could be considerably reduced if the cutting was done only once daily.

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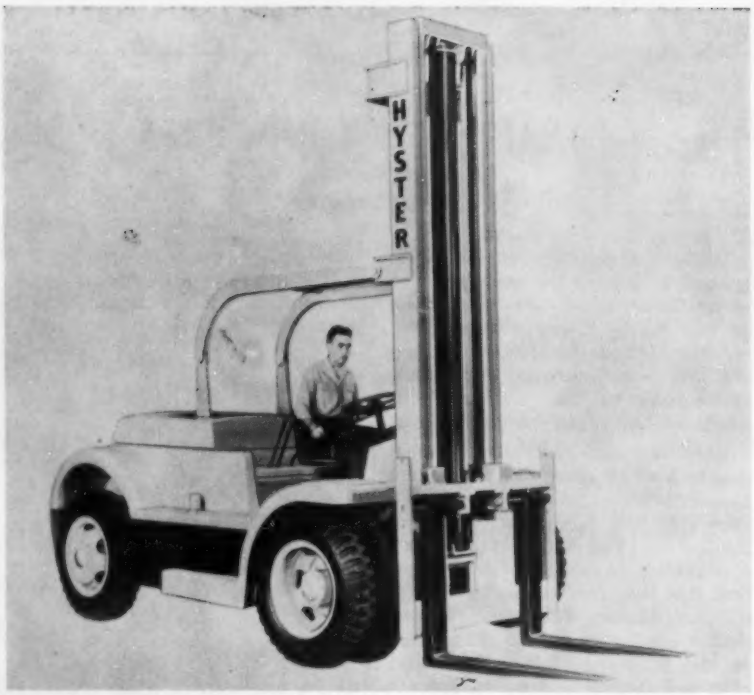

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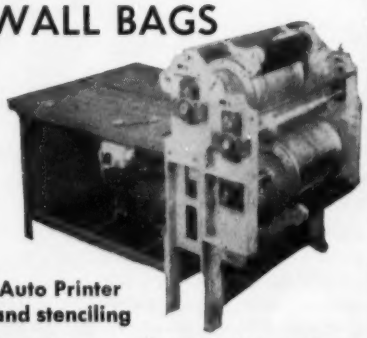

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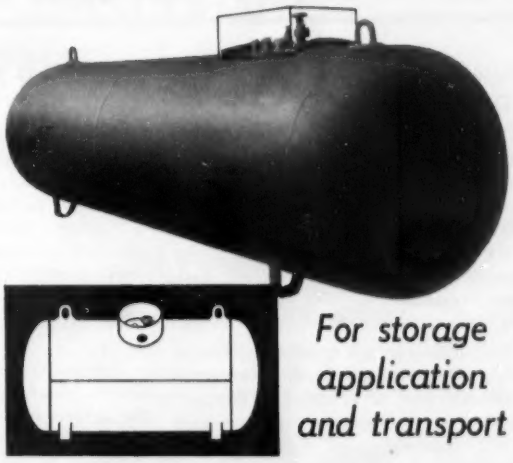

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Butler Holding 3-Day Conference

The return to "old-time selling" will be stressed to some 200 salesmen and officials of the Butler Manufacturing Company at a three-day general sales conference, starting February 2, at Excelsior Springs, Missouri, Glen C. Speakman, Butler Vice-President in Charge of Sales has announced.

Highlighting the conclave will be the revelation of four new steel products, and a "Products Revue," employing professional actors and 20,000 square feet of floor space in Kansas City's giant Municipal Auditorium.

Butler personnel representing all the factories and sales offices in the United States and Canada will attend the meetings dealing mostly with sales goals for 1954 and how to obtain those goals through down-to-earth selling, Mr. Speakman said.

The 53-year-old Kansas City company manufactures steel buildings and steel products in the farm, oil and cleaning industries.

Farmer Turns Actor For Shell Film

Howard Waters, who farms near Danville, Iowa, switched temporarily to acting to show how he beat soil insects in a struggle for his corn crops.

Waters is featured in "Corn's Hidden Enemies," a new full color film in which he reenacts what he did after his corn was destroyed in 1952. Now being shown to audiences throughout the Corn Belt, the 12-minute motion picture was produced by Shell Chemical Corporation. The company sent a camera crew from New York to Waters' farm when it learned of his efforts to insure his crop.

AP&C Has New Spray Plant Food

A new spray plant food for fruit trees and truck crops is being introduced by American Potash & Chemical Corporation.

Named "Borospray," the new product contains a high boron content particularly adapted for use as a foliage spray on fruit trees and truck crops where boron deficiencies exist.

It is being produced at their Trona, Calif. plant. The material has as its active ingredient sodium pentaborate. Sprayed on plants, the boron content is absorbed through the foliage.

Pink Bollworm Center Opened

The Pink Bollworm Research Center Brownsville, Texas, symbolizes a growing recognition of the role of scientific research in the destiny of the cotton industry, Dr. H. G. Johnston of the National Cotton Council declared at the formal dedication of the Center. Dr. Johnston said that "from the Beltwide point of view this program is something of a distinct departure from the customary delay in getting research under way."

Uhde Corp. Opens New York Office

Announcement is made of the formation of "THE UHDE CORPORATION" with offices at 350 Fifth Avenue, Suite 8205, New York 1, New York. The activities of the Corporation are managed by F. B. Grosselfinger, Executive Vice President.

The Uhde Corporation offers process know-how and engineering design in the chemical engineering field. In addition to direct collaboration with chemical companies, it will cooperate with design and construction companies for the purpose of erecting chemical plants in the organic and inorganic fields.

The processes available through The Uhde Corporation are based on the extensive experience of Friedrich Uhde, G.m.b.H., of Dortmund, Germany, which is the design and construction unit of the Farbwerke Hoechst A. G. group of chemical companies. This group is one of the major European chemical manufacturers, employs about 30,000 personnel in various plants, maintains an extensive research and development staff, and has been a pioneer in the chemical field for almost one hundred years.

Emulsol Picks Stone Company

The E. C. Stone Company, Denver, Colorado has been selected by the Emulsol Corporation, 59 East Madison Street, Chicago 3, to act as its technical sales representatives in the Rocky Mountain states area.

OBITUARIES

J. H. Allen, 44, owner and manager Allen Scale Co., Atlanta, Georgia died January 4 of a heart attack following a brief illness.

Henry P. Rusk, 69, Dean Emeritus of University of Illinois College of Agriculture, died January 9.

James Washington Short, Sr., 58, retired superintendent of the Smith-Rowland plant near Granite City, Illinois, died December 28 after a week's hospitalization.

Floyd T. Smith, 75, president of Smith-Wilkinson Guano Company, Spartanburg, S. C., died December 30 after a long illness.

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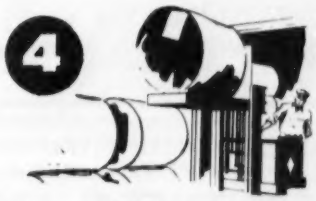

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WANTED: Young college graduate in chemical engineering willing to start in production and work up by a fast growing organization in the Northwest now contemplating expansion in new process developments in the fertilizer industry. Presently operating two plants. Opportunities excellent. Box 22, c/o Commercial Fertilizer, 75 3rd St., N.W. Atlanta, Ga.

WANTED: Aggressive young man, mid 30's, now employed as superintendent in acidulation and complete fertilizer plant, to develop into assistant to manager of fertilizer division of a fast growing organization in Northwest. Must have good educational background and have clean record of getting things done. Opportunities good. Box 23, c/o Commercial Fertilizer, 75 3rd St., N.W., Atlanta, Ga.

WANTED: Plant superintendent for acidulator and fertilizer plant in Northwest. Opportunities good. This open position due to expansion in our organization. Box 24, c/o Commercial Fertilizer, 75 3rd St., N.W. Atlanta, Ga.

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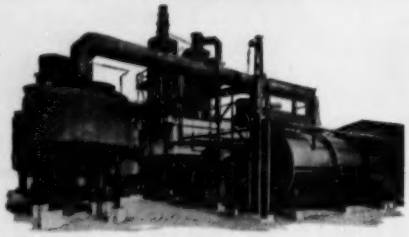

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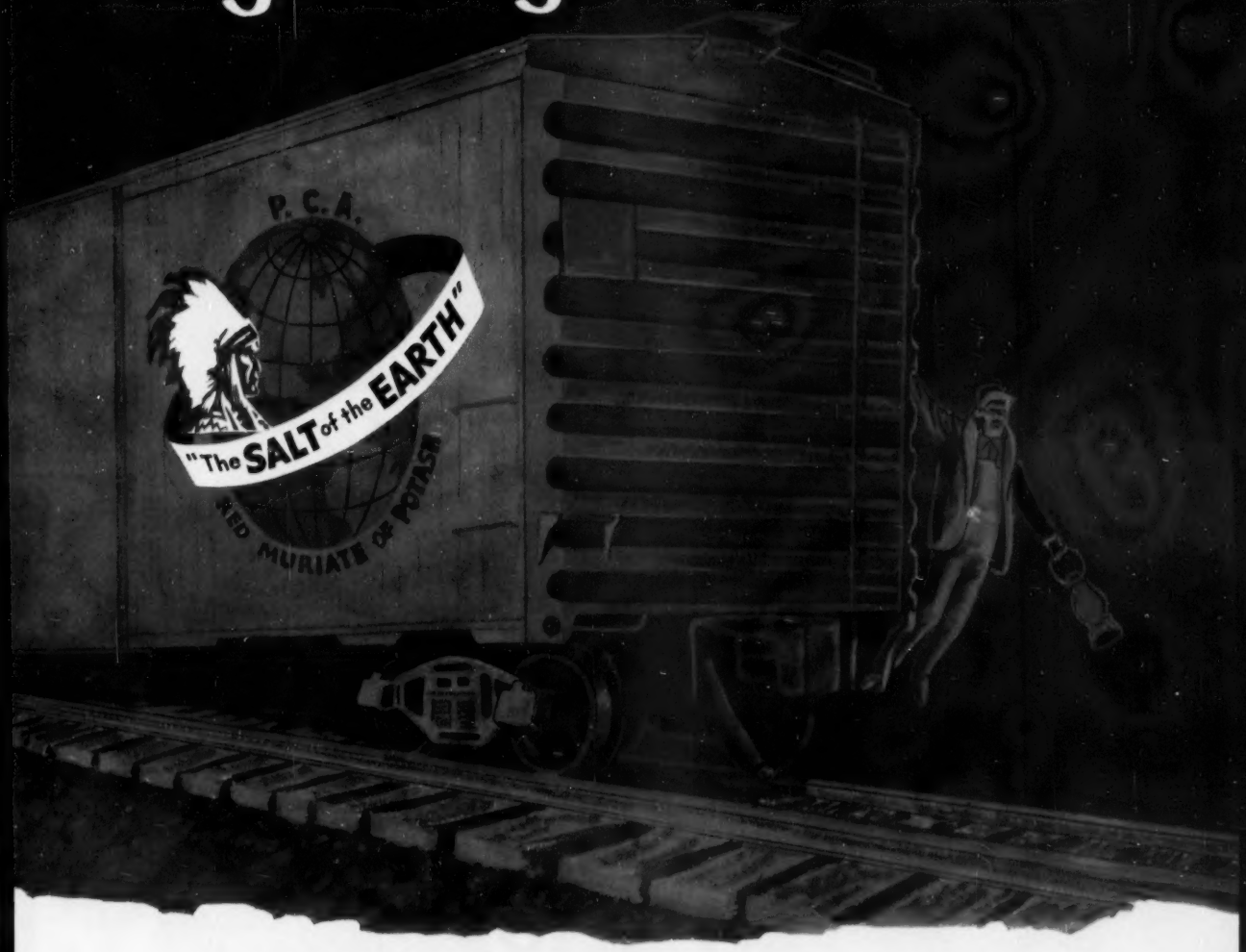

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